



Gas Pipeline

Appendix A – Project Description

SEPA Checklist

Everett Delta Lateral Project

September 2003

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List of Abbreviations

BNSF	Burlington Northern Santa Fe
DOT	U.S. Department of Transportation
EI	Environmental Inspector
FERC	Federal Energy Regulatory Commission
FWS	U.S. Fish & Wildlife Service
HDD	horizontal directional drill
MBF	thousand board feet
MP	milepost
NRCS	Natural Resources Conservation Service
NMFS	National Marine Fisheries Service
Northwest	Northwest Pipeline Corporation
PSE	Puget Sound Energy
SPCC	Spill Prevention Containment and Countermeasure
SWPPP	Stormwater Pollution Prevention Plan
WDOE	Washington Department of Ecology

1.0 Introduction

Northwest Pipeline Corporation (Northwest), a subsidiary of Williams Gas Pipeline, proposes to construct the Everett Delta Lateral Project to deliver natural gas from its existing mainline pipeline corridor north of Lake Stevens, Washington to Puget Sound Energy's (PSE's) distribution system in the City of Everett. The general location of the project is shown on Figure 1. The project is under the regulatory authority of the Federal Energy Regulatory Commission (FERC).

Northwest's project consists of approximately 9.19 miles of 16-inch diameter, buried pipeline and associated aboveground facilities, including the Everett Delta Meter Station and Mainline Tap Facilities, the Soper Hill Tap and the Everett Tap. The proposed project is located entirely within Snohomish County, however, 1.06 miles of the 9.19-mile project is located within the City of Everett. Operation of the Everett Delta Lateral Project will not require modifications or upgrades to Northwest's existing mainline pipeline system.

PSE will install an interconnect line located along Soper Hill Road and 83rd Ave NE (see Figure 2 and Site Plan 4). PSE will install approximately 1,300 feet of 8-inch and 750 feet of 6-inch pipe between the Soper Hill Regulator Station and an interconnection point located approximately 750 feet west of the intersection of 83rd Avenue NE and Soper Hill Road. This interconnection will be constructed within public right-of-way and will require a permit from Snohomish County. This pipe segment will be constructed in October 2004. The expected in-service date is November 2004.

2.0 Purpose and Need

The purpose of the Everett Delta Lateral Project is to install facilities that will deliver natural gas from Northwest's Ignacio to Sumas mainline to PSE's distribution system in the City of Everett, Washington and surrounding communities by the fall of 2004. The facilities will be designed to measure and deliver up to 113,117 decatherms per day of natural gas.

3.0 Schedule

Construction is scheduled to commence in early June 2004 and to require approximately five months to complete with a planned in-service date of November 1, 2004. The construction schedule will comply with seasonal construction windows for waterbody crossings.

4.0 Proposed Facilities

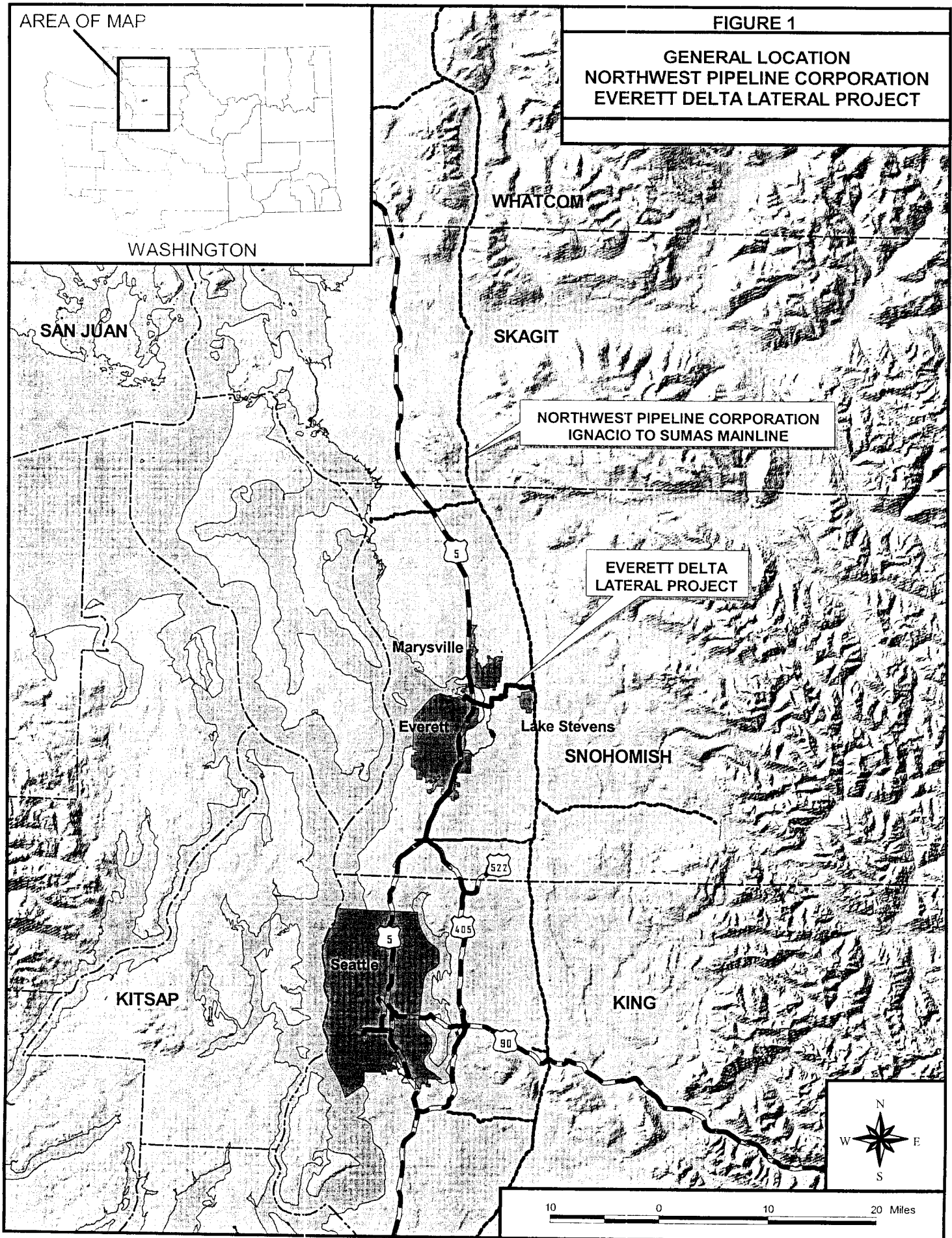
4.1 Location and Description of Facilities

Northwest's Everett Delta Lateral Project consists of 9.4 miles of new pipeline in Snohomish County, which is located north of Seattle (see Figure 1). Generally, the pipeline will be constructed in the western portion of the county and extend from a point a few miles north of Lake Stevens to the west, crossing south of Marysville and across the Snohomish River Floodplain, toward Possession Sound and the City of Everett. Figure 2 shows, in detail (based on USGS topographic maps), the location of the proposed project. The pipeline will originate at Northwest's existing mainline and loop pipelines. For purposes of this application, the origin of the new lateral is considered milepost (MP) 0. Mileposts are shown on Figure 2.

AREA OF MAP

FIGURE 1

GENERAL LOCATION
NORTHWEST PIPELINE CORPORATION
EVERETT DELTA LATERAL PROJECT



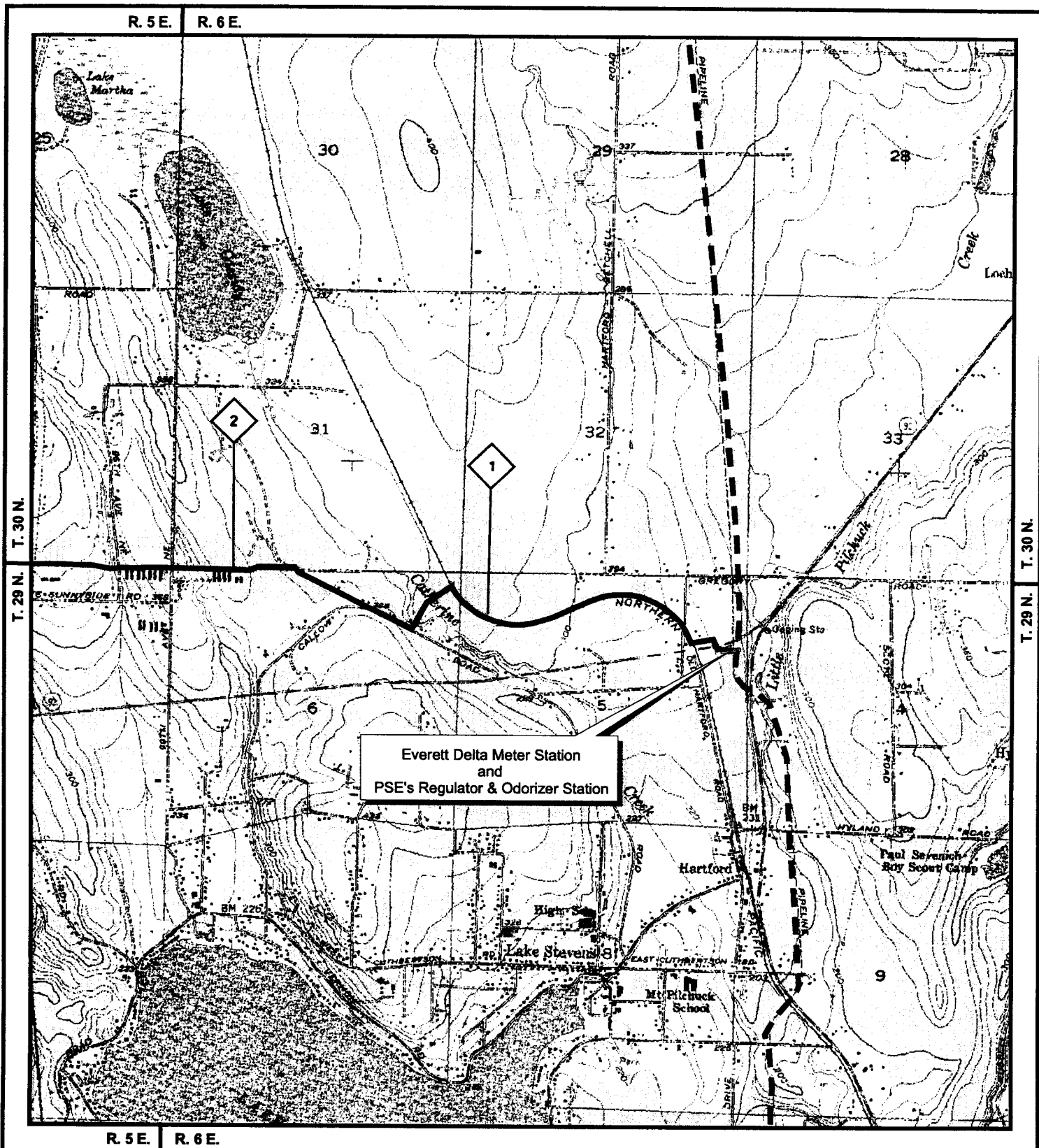


FIGURE 2 (Map 1 of 3)

DETAILED LOCATION OF NORTHWEST PIPELINE CORPORATION'S
EVERETT DELTA LATERAL PROJECT

Lake Stevens 7.5 Minute USGS Quadrangle Snohomish County, Washington

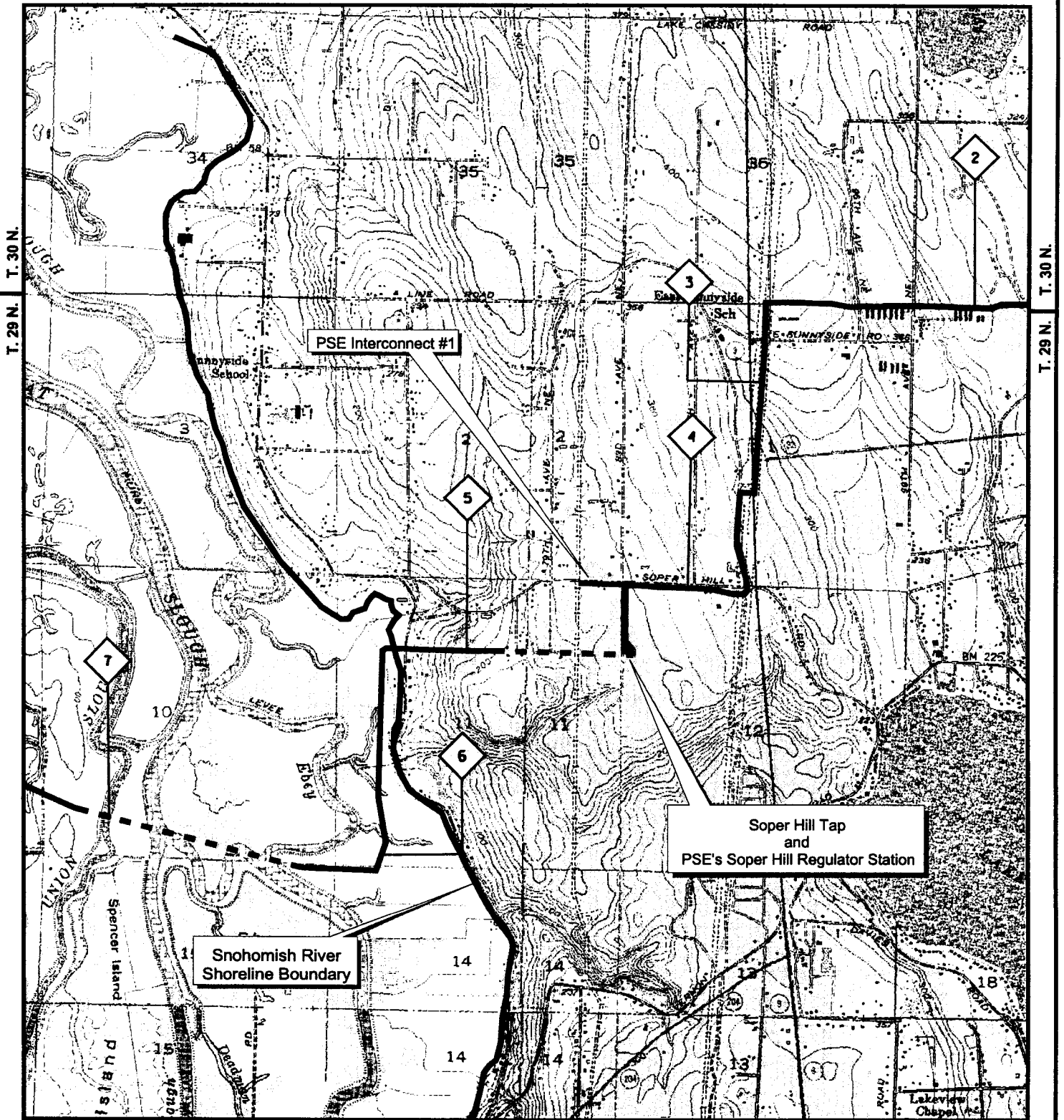
- Proposed Pipeline Route
- - Existing Northwest Mainline Pipeline Corridor



2000 0 2000 Feet

Scale 1 : 24,000

R. 5 E.



R. 5 E.

FIGURE 2 (Map 2 of 3)

DETAILED LOCATION OF NORTHWEST PIPELINE CORPORATION'S
EVERETT DELTA LATERAL PROJECT

Lake Stevens & Marysville 7.5 Minute USGS Quadrangles Snohomish County, Washington

- Proposed Pipeline Route
- - - Horizontal Directional Drill



2000 0 2000 Feet

Scale 1 : 24,000

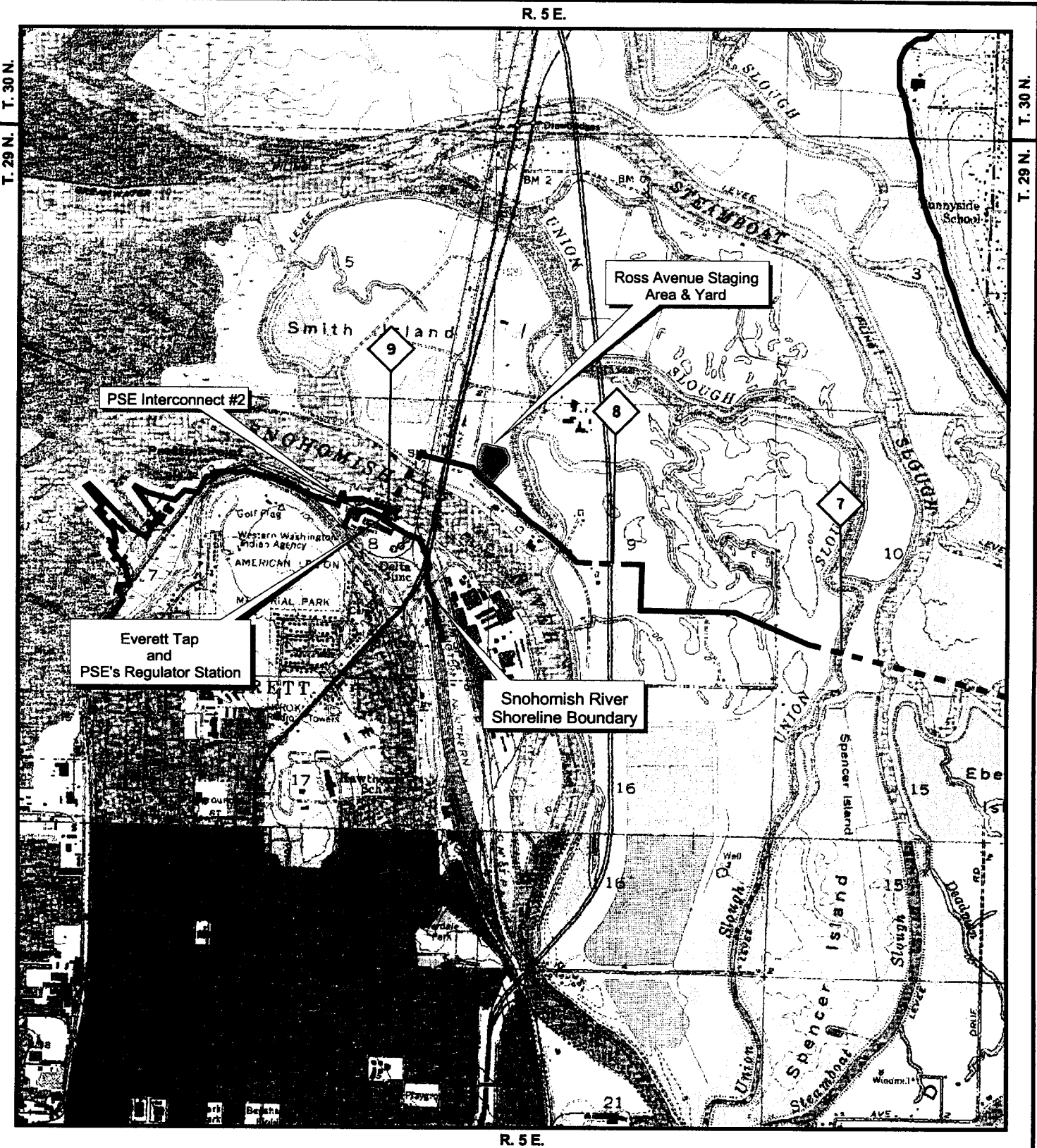


FIGURE 2 (Map 3 of 3)

DETAILED LOCATION OF NORTHWEST PIPELINE CORPORATION'S
EVERETT DELTA LATERAL PROJECT

Marysville 7.5 Minute USGS Quadrangles Snohomish County, Washington

- Proposed Pipeline Route
- - - Horizontal Directional Drill



2000 0 2000 Feet

Scale 1 : 24,000

From the Everett Delta Meter Station and Mainline Tap Facilities at MP 0, the lateral pipeline will proceed to the west. It will cross State Highway 92 and will be laid within the Centennial Trail as required by FERC's Certificate.

Originally, Northwest proposed to cross Catherine Creek at MP 1.44 by using horizontal directional drilling (HDD) to avoid any impact to the creek, associated wetland complex and fisheries habitat. Through additional geotechnical investigations, site visits and studies of the Catherine Creek HDD, APSI, the geotechnical and HDD consultant, has determined that the probability of a successful HDD with no major problems would be less than 25 percent due to the amount of potential gravels and cobbles. Because obtaining permits for a flume across Catherine Creek and the associated wetland along the HDD alignment would be unlikely, Northwest has located a preferred reroute, the Holly Lane Reroute, which crosses Catherine Creek under an existing culvert.

The Holly Lane Reroute begins at the west end of the Centennial Trail at MP 1.16 and proceeds southwest approximately 1,130 feet to Callow Road. Of the 1,130 feet, 585 feet are within a private drive. Upon intersecting Callow Road, the lateral reroute will continue to the northwest for approximately 2,492 feet following Callow Road until it merges with Holly Lane and then follows Holly Lane until it merges with the original route at the intersection of Holly Lane and 44th Street. Callow Road and Holly Lane are paved in this area, and the lateral pipeline will be installed within the paved portion of both roads. Catherine Creek will be crossed by fluming (see Appendix D for fluming procedures) at MP 1.32 where a culvert has already been installed under a private drive (see Section 5 of the Supplemental Volume for a crossing plan).

At approximately MP 2.13, the pipeline will cross Lundeen Creek which is tributary to Lake Stevens (see Figure 2). The crossing location is approximately 1.4 miles north of its confluence with Lake Stevens. At the crossing location, Lundeen Creek is intermittent and there is no discernable stream channel present. The crossing technique for this stream will depend on flow conditions at the time of construction. If the streambed is dry (the expected condition - during site visits in October 2000 this stream was not flowing), the creek will be open cut. If water is present in the streambed, the stream will be crossed with a flume.

The route will continue west and cross Upper Stevens Creek, also tributary to Lake Stevens, at MP 2.42. The stream will be crossed approximately 1.4 miles north of its confluence with the lake. The crossing will occur adjacent to a driveway where nearly 50 feet of the stream has been routed through a culvert and backfilled to provide parking. This stream was flowing during October 2000 site visits and is expected to be flowing during construction. The crossing technique for this stream will depend on flow conditions at the time of construction. If water is present in the streambed, the crossing will utilize a flume. If the streambed is dry, the creek will be open cut. Once across the Upper Stevens Creek, the pipeline will proceed west before entering a north-south oriented transmission corridor. The pipeline will cross State Highway 92 at MP 3.27, within the transmission line corridor.

At MP 3.41, the lateral pipeline will turn to the west and cross State Highway 9 within the transmission line corridor. Once on the west side of State Highway 9, the pipeline will turn south and travel along the eastern edge of Densmore Road and will cross Soper Hill Road at MP 3.77. On the south side of Soper Hill Road the pipeline will turn directly to the west and parallel the south side of Soper Hill Road in a landscaped area associated with the Agilent Business Campus.

At approximately MP 4.44 , Northwest will install a block valve assembly at the Soper Hill Tap. A permanent access road will be required at this location. Section 3 of the Supplemental Volume provides a 24th Street HDD crossing plan.

Immediately adjacent to the Soper Hill Tap, a residential area near 24 Street NE will be crossed by HDD. The pipeline will continue west, and at MP 5.10 the lateral will descend a steep hill on the east side of Sunnyside Boulevard (MP 5.21). Once past Sunnyside Boulevard, the route will continue west then south across the Snohomish River Floodplain. At MP 6.06 the pipeline will turn west and proceed to the edge of Ebey Slough.

Historically the entire Snohomish River Floodplain was subject to tidal influence. Although dikes have been constructed along most of the sloughs and extensive ditch networks installed to drain the floodplain, much of the floodplain still consists of wetlands. The majority of the lateral pipeline alignment between Sunnyside Boulevard and Ebey Slough will cross wetlands. Land use in the floodplain is a mixture of hayfields and pastures.

A number of streams and ditches will be crossed between Sunnyside Boulevard and Ebey Slough. Most probably contain water year-round, and sluice gates have been installed on a number of the drainages to prevent tidewater from moving up the ditches. Typically, ditches have been constructed along the edge of every parcel/pasture. Most of the ditches are designed to drain pastures, and some are cleaned annually with a backhoe. Some of the ditches have been sprayed with herbicide to control vegetation growth and to improve drainage.

Hulbert Creek, tributary to Ebey Slough, will be crossed on the floodplain at MP 5.69. The stream is channelized where the crossing will occur. At the crossing the stream is approximately three feet wide. A fish ladder has been installed to the east of the crossing adjacent to Sunnyside Boulevard. This stream is perennial and will be crossed using a flume. At approximately MP 5.93 the lateral pipeline will cross an unnamed tributary to Ebey Slough. This 12 foot wide stream is perennial and will also be crossed using a flume. A sluice gate has been installed on this stream at the confluence with Ebey Slough to prevent tidewater from flowing up the drainage.

At approximately MP 6.06 the pipeline will turn to the west and proceed to the east side of Ebey Slough. As shown on Figure 3, Northwest proposes to cross Ebey, Steamboat and Union sloughs using an HDD. The purpose of the drilled crossing is to avoid impacts to the sloughs and the significant wildlife habitats, recreation opportunities and wetlands on the islands formed by the sloughs. WDFW has designated Spencer Island (formed by Steamboat and Union sloughs) as a wildlife management area. The lateral pipeline alignment will cross the north end of the island, a vast wetland that provides nesting habitat for waterfowl. The southern portion of the island, which supports equally extensive wetlands, is owned by Snohomish County and is managed as a county park. No vehicular traffic or parking is allowed on the island, but a developed walking trail around the island receives heavy use by the public. Otter Island is also important wildlife habitat, and the island is only accessible by boat.

The drill rig will be set up in a temporary extra work area at MP 6.35 on the east side of Ebey Slough (see Figure 3). From this work area Northwest will drill approximately 3,899 feet under Ebey Slough, Steamboat Slough, Otter Island, Spencer Island and Union Slough. A detailed plan for the crossing of these major waterbodies is included in Section 1 of the Supplemental Volume. From the drill exit point (MP 7.13), the pipeline will continue west across the Snohomish River Floodplain (Smith

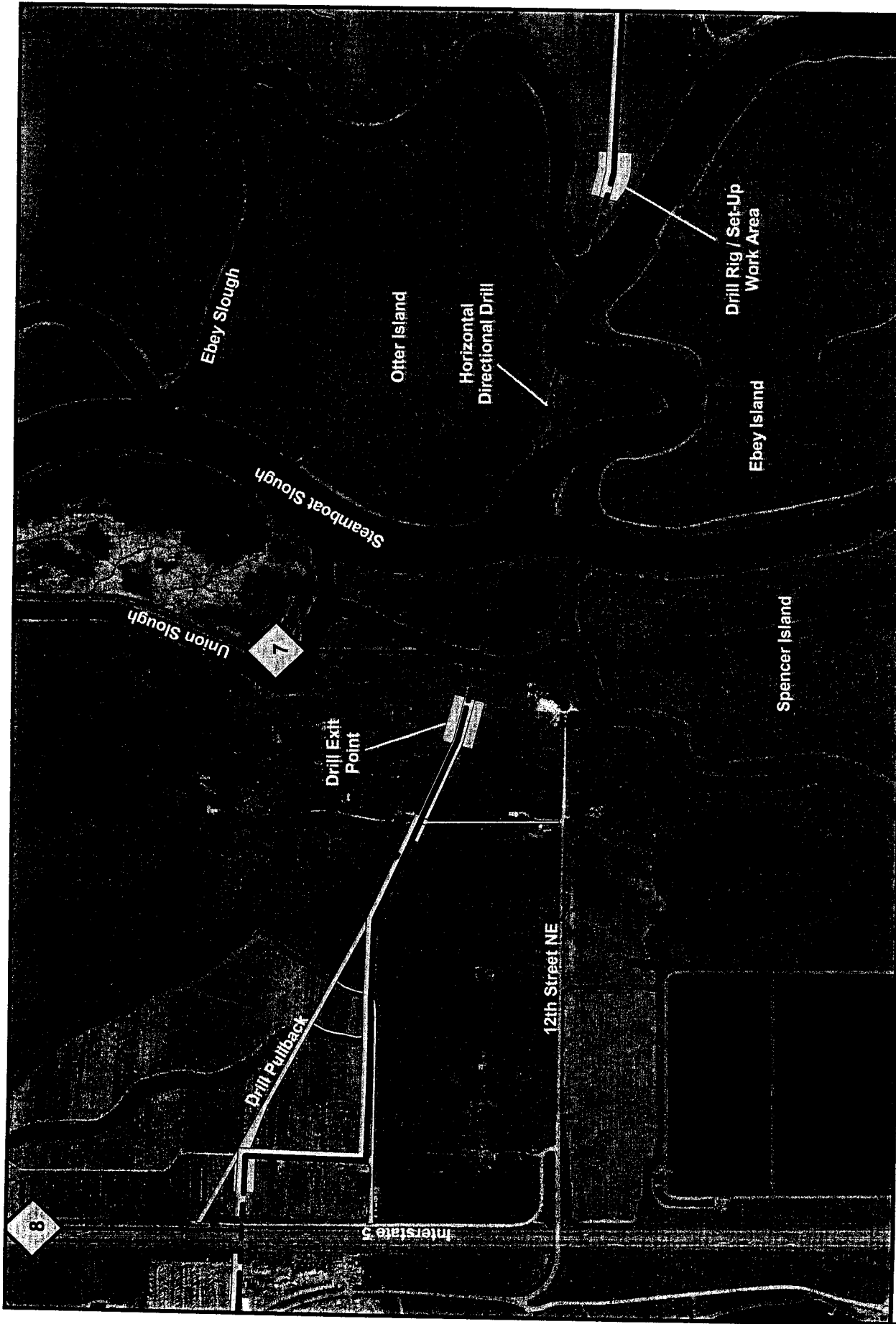


FIGURE 3
Aerial Photography of the Drilled Crossing
Alignment for Ebey, Steamboat and Union Sloughs

Island). This area consists primarily of pasture, some of which is currently being filled. Beginning at MP 7.51 the lateral pipeline will cross a tree nursery along its southern edge utilizing existing nursery roads.

In the nursery, at MP 7.57, the lateral pipeline will cross Johnson Slough which is a wetland at the crossing. Although stagnant water was present near the crossing area after rains during October 2000 site visits, no defined stream channel is present in the slough at the crossing location. Johnson Slough will be crossed by open cut methods. On the west end of the tree nursery (at MP 8.01) Interstate 5 (I-5) will be crossed using an HDD (see Section 4 of the Supplemental Volume). Once across I-5 the pipeline will continue west and then turn to the north traversing a boat yard. Initially, Northwest had proposed to open cut Smith Slough. However, during an on-site investigation of waterbody crossings with the Washington Department of Ecology (WDOE) and the City of Everett biologist, Northwest was informed that the agencies intend to reestablish tidal flow in Smith Slough in the future and that an alternative to open cutting the slough needed to be evaluated. To address this concern, Northwest revised the location of the pipeline to a route that passes through the boat yard and avoids the slough.

After crossing the Burlington Northern Santa Fe railroad tracks at MP 8.78, the pipeline enters a log yard and proceeds to the exit point for the Snohomish River HDD. The drill rig will be setup on a temporary extra work area on the south bank of the river at the former Weyerhaeuser site in the City of Everett (see Figure 4).

4.2 Land Requirements

4.2.1 Pipeline Facilities

Construction Right-of-Way. Table 1 summarizes the construction land requirements for the project. Construction of the lateral pipeline will primarily use a 75-foot wide construction right-of-way. However, a number of areas will require the construction right-of-way to be reduced to less than 75-feet in width, such as in wetlands and in residential areas. Areas where the construction right-of-way has been reduced to avoid or minimize impacts to wetlands are factored into the estimates on Table 1. In total, construction of the project will result in 88.67 acres of disturbance including 0.95 acres for aboveground facilities at three individual sites (i.e., Everett Delta Meter Station and Mainline Tap Facilities, the Soper Hill Tap, and the Everett Tap).

Table 1 Land Requirements for Construction and Operation of Northwest's Everett Delta Lateral Project			
Facility	Length or Number of Sites	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Lateral Pipeline	9.19 miles	64.34	48.90 ²
Temporary Extra Work Areas ¹	78 sites	19.96	0
Temporary Construction Access Roads	7,175 feet ⁴	3.30 ^{3,4}	0
Permanent Access Road	258 feet	0.12 ³	0.12 ³
Aboveground Facilities	3 sites	0.95 ⁴	0.95 ⁴
Total	N/A	88.67	49.97

¹ Temporary extra work areas are shown on the Site Plans.
² Based on a 50-foot wide permanent easement in all areas except those crossed by HDD, where the permanent easement will be 20 feet wide (10 feet on either side of the pipeline centerline).
³ Assumes an average disturbance width of 20 feet.
⁴ Length and/or acreage of PAR-1 have not been included in the temporary construction access road or aboveground facilities calculations to prevent duplication.



FIGURE 4
Aerial Photography of the Drilled Crossing
Alignment of the Snohomish River

Permanent Easement. A permanent easement is needed for long-term operation and maintenance requirements. Northwest will acquire a 50-foot wide permanent easement for the project. The easement will consist of 25-feet on both sides of the pipeline centerline. As can be seen on Table 1, the permanent easement for the entire project will consist of approximately 49.97 acres.

Temporary Extra Work Areas. In addition to the typical 75-foot wide construction right-of-way, additional temporary extra work areas are required at specific locations. Generally, these temporary extra work areas will be required for (but not limited to) one of the following reasons:

- Bore pits at road and railroad crossings;
- Spoil storage and construction of drag section for wetland crossings;
- For waterbody crossings and along the steep slope leading to Sunnyside Boulevard;
- Egress and ingress to the right-of-way; and
- For set-up of horizontal directional drills and pipe pull back.

FERC's *Wetland and Waterbody Construction and Mitigation Procedures* (FERC's Procedures, see Appendix C) contain a number of specifications regarding the location of temporary extra work areas in proximity to waterbodies and wetlands. As is demonstrated below, Northwest will comply with all the requirements specified in FERC's Procedures regarding the location of temporary extra work areas where possible:

- With a few exceptions (obtained FERC variance), all extra work areas will be located at least 50 feet away from waterbody and wetland boundaries;
- Vegetation clearing between the temporary extra work areas and the edge of the waterbody will be limited to the 75-foot wide certificated construction right-of-way; and
- Temporary extra work areas have been sized to the minimum necessary.

There are 78 temporary extra work areas totaling 9.96 acres of temporary construction disturbance (see Table 2).

Number	Purpose	Milepost	Working Side Extra Work Area (acres)	Non-Working Side Extra Work Area (acres)
0.1	Meter station and PSE's odorizing facility	0.00	0.39	
1-R	State Highway 92 (south side) bore and egress/ingress	0.07		0.20
2	State Highway 92 (north side) bore and egress/ingress	0.09		0.05
2.1	Facilitate construction within the Centennial Trail	0.16	0.06	
2.2	Facilitate construction within the Centennial Trail	0.17		0.03
3.1	127th Avenue NE bore, egress/ingress, spoil storage	0.19		0.36
3-R	127th Avenue NE bore, spoil storage	0.24	0.06	
4-R	127th Avenue NE (west side) bore and egress/ingress	0.26	0.03	
4.1	127th Avenue NE (west side) bore, spoil storage	0.26		0.04

Table 2 (Continued)				
Number	Purpose	Milepost	Working Side Extra Work Area (acres)	Non-Working Side Extra Work Area (acres)
5-R	Wetland spoil storage and drag section layout	0.49	0.09	
6-R	Wetland spoil storage and drag section layout	0.54	0.08	
6.1	Wetland spoil storage and drag section layout	0.60		0.07
8.1	Wetland spoil storage and drag section layout	0.70		0.14
8.2	Wetland spoil storage and drag section layout	0.77		0.07
8.3	Wetland spoil storage and drag section layout	1.02		0.06
9.1	Wetland spoil storage, drag section layout and staging	1.34	0.04	
10.1	Spoil storage and staging	1.36	0.06	
11.1	Spoil storage and staging	1.49	0.12	
12.1	Spoil storage and staging	1.60	0.37	
13.1	Spoil storage and staging	1.67		0.16
14-R	Spoil storage and staging	1.76		0.45
15	99th Avenue NE (east side) bore and egress/ingress	2.21	0.07	
16	99th Avenue NE (west side) bore and egress/ingress	2.23	0.07	
17	Residential area spoil storage and staging	2.32	0.23	
18	95th Avenue NE (east side) spoil storage	2.40		0.07
19	Upper Stevens Creek (west side) spoil storage for flumed crossing	2.44	0.11	
20 & 21	91st Avenue NE (east side) bore and egress/ingress	2.70	0.03	0.17
22 & 23	91st Avenue NE (west side) bore and egress/ingress	2.73	0.22	0.01
24	42nd Street NE (north side) bore and egress/ingress	2.83	0.20	
25	42nd Street NE (south side) bore and egress/ingress	2.87	0.20	
26	Wetland spoil storage and drag section layout	2.93		0.06
27 & 28	Wetland spoil storage and drag section layout	3.00	0.09	0.05
29	Wetland spoil storage and drag section layout	3.03		0.02
30	Wetland spoil storage and drag section layout	3.09		0.06
31 & 32	State Highway 92 (north side) bore and egress/ingress	3.24	0.09	0.25
33 & 34	State Highway 92 (south side) bore and egress/ingress	3.29	0.09	0.26
35 & 36	State Highway 9 (east side) bore	3.39	0.01	0.29
37	State Highway 9 (west side) bore	3.45	0.16	
38	Wetland spoil storage and drag section layout	3.46		0.09
39 & 40	Soper Hill Road (north side) bore and egress/ingress	3.76	0.05	0.19
41 & 42	Soper Hill Road (south side) bore and egress/ingress	3.79	0.20	0.51
43	Agilent Driveway (west side) bore and egress/ingress	3.90		0.17
44	Wetland spoil storage and drag section layout	4.02	0.09	
HDD 5-R	24th Street NE HDD Entry	4.45	0.53	
HDD 6-R HDD 7-R	24th Street NE HDD Exit	4.90	0.12	0.17
51.1	Steep slope construction	5.04	0.17	
51.2	Steep slope construction	5.10	0.06	

Table 2 (Concluded)				
Number	Purpose	Milepost	Working Side Extra Work Area (acres)	Non-Working Side Extra Work Area (acres)
52-R	Sunnyside Boulevard (east side) bore and egress/ingress	5.20		0.09
53-R	Sunnyside Boulevard (east side) bore and egress/ingress	5.20		0.07
54	Sunnyside Boulevard (west side) bore and egress/ingress	5.23		0.16
55 & 56	Unnamed Tributary to Ebey Slough (north side) equipment staging and spoil storage	5.90	0.05	0.25
57	Unnamed Tributary to Ebey Slough (south side) equipment staging and spoil storage	5.98	0.35	
59-R 60-R	Ebey, Steamboat and Union sloughs drill set up and extra work area	6.32	0.50	0.80
61-R 62-R	Ebey, Steamboat and Union sloughs drill exit and extra work area	7.10	0.64	0.60
63	51st Avenue NE (west side) open cut and egress/ingress	7.26		0.10
74-R 75-R	Sloughs drill pullback extra work area	7.40 (adjacent)	2.15	
64-R 65-R	Interstate 5 (east side) HDD	7.91	0.10	0.31
66-R	Interstate 5 (west side) HDD	8.08	0.09	
68-R	Smith Avenue open cut and 35th Avenue NE (east side) bore and egress/ingress	8.59	0.34	
69-R	35th Avenue NE (west side) bore and State Highway 529 spoil storage and egress/ingress	8.68	0.33	
71-R 72-R	Snohomish River drill exit and extra work area and BNSF Railroad and Ross Avenue (west side) bore	8.80	1.13	0.19
70-R	Snohomish River drill pullback extra work area	8.80 (adjacent)	1.33	
73-R	Snohomish River drill set up and extra work area meter station construction extra work area	9.02	2.29	

¹ Temporary extra work areas designated with an "R" indicate work areas that were previously utilized for the certificated alignment but have been modified or slightly altered. Temporary extra work areas designated with a decimal (i.e., 2.1, 2.2, etc.) indicate new work areas that have been added since the FERC Certificate was issued.

Temporary Construction Access Roads. Table 3 provides the location, length, acres of disturbance and the purpose of the 11 temporary roads required to access the construction right-of-way and HDDs. All temporary access roads are assumed to be 20 feet in width. The 11 temporary access roads will cause a total disturbance of 3.42 acres. Of the 3.42 acres, 0.12 acre will be permanent; PAR-1 will be converted to a permanent access road after construction is complete to provide access to the Soper Hill Tap and PSE's Soper Hill Regulator Station.

Table 3 New Construction Access Roads Necessary for the Everett Delta Lateral Pipeline				
Number	Milepost	Length (feet)	Disturbance (acres)	Purpose
TAR-1	0.54	225	0.10	Right-of-Way Access
TAR-2	0.89	140	0.06	Right-of-Way Access
TAR-5	3.11	233	0.11	Right-of-Way Access
PAR-1 ¹	4.44	258	0.12	Access to Soper Hill Tap and PSE's Soper Hill Regulator Station
TAR-6	4.45	120	0.06	Access to 24th Street HDD Entry, Soper Hill Tap and PSE's Soper Hill Regulator Station
TAR-7	5.52	417	0.19	Right-of-Way Access
TAR-8	6.06	2,886	1.33	Right-of-Way Access
TAR-9	7.25	984	0.45	Right-of-Way Access
TAR-10	7.50	210	0.10	Ebey Slough HDD Pullback
TAR-11	7.73 7.52	1,590	0.73	Right-of-Way Access
TAR-12	7.56	370	0.17	Ebey Slough HDD Pullback
Total		7,433	3.42	
¹ After construction is complete, this road will be converted to a permanent access road (PAR-1) for access to the block valve assembly.				

4.2.2 Aboveground Facilities and New Permanent Access Roads

Disturbance associated with aboveground facilities and one new permanent access road necessary to service these facilities is summarized in Table 4. The locations of aboveground facilities are shown on Figure 2 and on the Site Plans.

To tie-in the lateral pipeline to Northwest's existing mainline and loop pipelines, Northwest will install the Everett Delta Meter Station and Mainline Tap Facilities at MP 0. At that same location, PSE will construct the Everett Delta Regulator and Odorizer Station (see Figure 5). The combined meter station-regulator station will be within a fenced and graveled site covering approximately 0.83 acre (Table 4). Existing access to Northwest's mainline block valve site will be used to access the Everett Delta Meter Station and Mainline Tap Facilities.

At approximately MP 4.44 Northwest will install two tap valves (Soper Hill Tap) to serve PSE's Soper Hill Regulator Station, which also will be located on the site (see Figure 6). The facility will be enclosed by chain-link fence on a 50 x 50 foot (0.06 acre) site (see Site Plan 4). It will be necessary to construct approximately 258 feet of new, permanent road (PAR-1) to allow the site to be accessed. PAR-1 will disturb 0.12 acre over the long-term.

The project will provide gas to PSE at the Everett Regulator Station which PSE will construct at the end of the lateral to serve their distribution system in the area (see Figure 7). PSE will own and operate the Everett Regulator Station located within the City of Everett. Northwest will install a pig receiver with a valve and two tap valves to serve the regulator station (Everett Tap) at the pipeline terminus (MP 9.19). The regulator station and Everett Tap will be located within the 50 x 50 foot fenced 0.06-acre site. The entry point of the Snohomish River HDD is at this same location. An existing road will be used to access the site (see Site Plan 8).

Total disturbance associated with Northwest's aboveground facilities will be approximately 1.07 acres. Of the total disturbance, 0.92 acre will occur outside the 50-foot wide permanent pipeline easement or other existing Northwest easements.



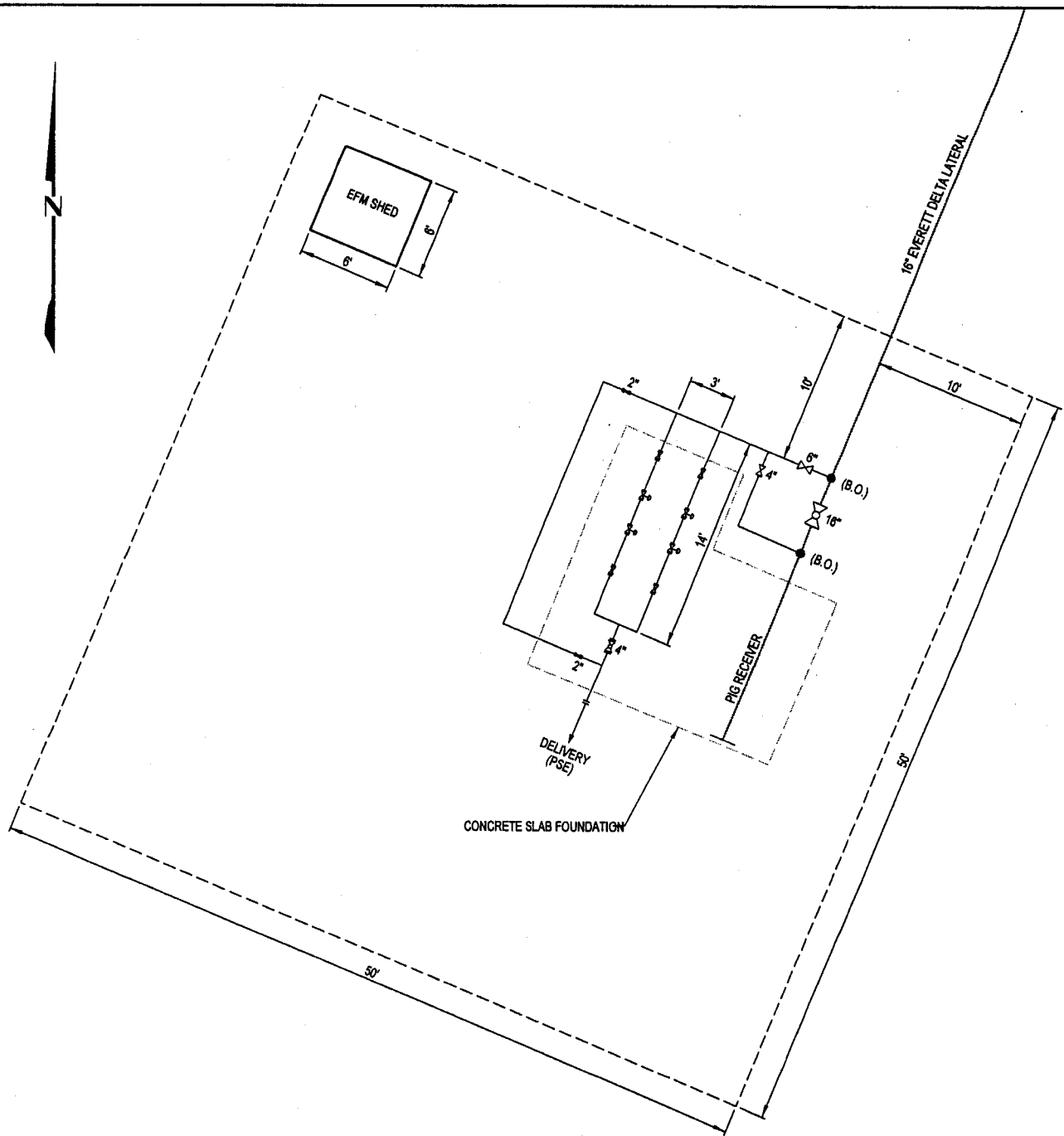


FIGURE 7
 EVERETT TAP
 AND
 PSE's REGULATOR STATION PLOT PLAN

Table 4 Summary of Disturbance Associated with Aboveground Facilities and New Permanent Access Roads			
Facility	Site Plan	Approximate Milepost	Acres Disturbed
Everett Delta Meter Station	1	0.0	0.83
Soper Hill Tap	4	4.44	0.06
Block Valve Assembly Permanent Access Road	4	4.44	0.12
Everett Tap	9	9.15	0.06
Total			1.07

4.2.3 Contractor Yards, Pipe Storage Yards and Disposal Yards

Four temporary contractor and pipe storage yards will be necessary for the project. These include:

Marysville Siding. An existing railroad siding in Marysville for off loading pipe and construction equipment. The siding is less than 2 acres in size and is situated in an industrial area between 4th and 8th Streets. The siding is located in the SW ¼ Section 28, T. 30 N., R. 5 E.

Arlington Siding. A 40-acre siding in the City of Arlington (NE ¼ Section 22, T. 31 N., R. 5 E.) for off-loading pipe and construction equipment. The siding is currently occupied by a log mill; most of the yard has been graveled and is used to store treated and untreated poles and pilings.

Port of Everett/Burlington Northern Santa Fe (BNSF) Siding and Yard. It is not currently known where staging and storage activities may take place within the Port, or how large an area would be required. BNSF's Delta Junction Yard, which is on the west side of the Port, may be used to off-load pipe and equipment, which could then be staged at the Port.

Ross Avenue Staging Area and Yard. A 4-acre site at approximately MP 8.6 between Smith Avenue and 35th Avenue NE, would be used for pipe and equipment staging. The site is elevated and filled and the southwest portion is currently used for truck parking; and the remainder of the site is covered with weedy vegetation.

5.0 Construction Procedures

Northwest's project will be designed, constructed, operated, and maintained in accordance with the U.S. Department of Transportation (DOT) regulations in 49 CFR Part 192, "*Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards*"; 18 CFR Part 2.6, "*Guidelines to be Followed by Natural Gas Pipeline Companies in the Planning, Clearing, and Maintenance of Rights-of-Way and the Construction of Aboveground Facilities*"; and other applicable federal and state regulations. In addition to the DOT requirements listed above, Northwest will also construct and reclaim the pipeline and aboveground facilities in accordance with FERC's Plan (Appendix B) and Procedures (Appendix C). This section describes the general steps that will be used to construct the lateral pipeline and aboveground facilities under typical conditions.

5.1 Construction Schedule

Numerous factors have been identified which will affect timing of construction of the project. These factors are listed below:

- The project must be in-service by November 1, 2004;
- The horizontal directional drills of Ebey, Steamboat and Union sloughs and the Snohomish River need to be completed when the water table in the floodplain is low;
- The crossings of Hulbert Creek and other flowing streams on the Snohomish River Floodplain need to be completed between about June 1 and October 31 to reduce impacts to spawning salmonids and rearing habitat;
- The crossings of Catherine Creek and Upper Stevens Creek (and other streams east of State Highway 9 flowing at the time of construction) need to be completed during low flow (typically between June 1 and October 15) to reduce impacts to spawning salmonids and rearing habitat;
- Snohomish County regulations generally place significant restrictions on utility construction activities within the Snohomish River Floodplain between October 1 and April 30;
- Within 300 feet of active red-tailed hawk nests construction needs to occur between July 1 and March 1;
- Northwest intends to have hydrostatic testing, backfill and final grading (including temporary and permanent erosion control structures) substantially complete before the "rainy season" begins (about November 1) to reduce costs as well as surface damage and erosion.

In response to these factors, Northwest proposes to construct the pipeline and aboveground facilities starting early June 2004 with a planned in-service date of November 1, 2004.

5.2 FERC Preconstruction Filings

5.2.1 Coldwater Fisheries

Many of the perennial and some of the intermittent waterbodies that will be crossed by the lateral pipeline are considered critical habitat for federally-threatened chinook salmon. Also, some of the waterbodies are presumed by Snohomish County to provide habitat for federally-threatened bull trout. In order to minimize impacts from construction, Northwest will utilize dry crossing techniques (either drill or flume) if these streams are flowing at the time of construction. Crossings will comply with in-stream construction windows established by WDFW.

FERC's Procedures (see Section V.B.1) contain recommended crossing time windows for coldwater fisheries where crossing dates are not otherwise specified by an appropriate state agency. The WDFW must issue Hydraulic Project Approval permits for crossings of all waterbodies. Those permits will contain specific construction time windows that are dependent on the species found in the area waters. Discussions with the WDFW suggest the dates outlined in Section 1.5.1 above will be applied to construction of the lateral pipeline. The dates specified in those permits supersede the general construction time windows contained in FERC's Procedures. It is also relevant to note that all the waterbodies which will be crossed by the lateral pipeline are considered critical habitat for chinook salmon (federally-threatened) and the National Marine Fisheries Service (NMFS) will need to concur with any timing windows imposed by any of the agencies. Similarly, the U.S. Fish and Wildlife Service (FWS) will need to concur with any timing windows in waterbodies that contain federally-threatened bull trout.

5.2.2 Stormwater Pollution Prevention Plan

A Stormwater Pollution Prevention Plan (SWPPP) will be prepared to support WDOE, City of

Everett and Snohomish County permit applications. The SWPPP will address more stringent sediment control requirements of these state and local agencies. Erosion control and sedimentation are the primary focus of Snohomish County's grading permit. The SWPPP will be available on-site at all times.

5.2.3 Spill Prevention, Containment and Countermeasure Plan

Pursuant to FERC's Procedures (see Section IV.A), Northwest has prepared a Spill Prevention, Containment and Countermeasure (SPCC) Plan for the project. That plan is included as Appendix E of this SEPA Checklist.

5.2.4 Wetland Delineation Report

Appendix A in the Critical Areas Study contains a wetland delineation report for the project. The locations of wetlands that will be affected by construction are provided in Appendix B of the Study. Northwest will continue to work with those landowners where surveys have not been completed and try to obtain survey permission. Surveys will be completed prior to construction.

5.3 Environmental Controls, Supervision and Inspection

Northwest will include all local, state and federal permits and FERC's Plan and Procedures requirements in contract documents, including the construction drawings. Sensitive environmental areas, will be identified in the contract documents and procedures for completing construction within these areas will be discussed in detail. Information will be provided regarding wetland and stream construction techniques and monitoring requirements. Permit specifications will not be a separate portion of the contracts, but incorporated with all other specifications. All inspectors, including Environmental Inspectors (EIs), company project management and foremen will receive all contract documents.

Northwest will employ two EIs during active construction and during clean up and active restoration. At least one EI will have knowledge of the wetland and waterbody characteristics in the project area. The EIs will have peer status with all other activity inspectors and authority to stop activities that violate environmental conditions of the FERC certificate or other authorizations. The EIs will be authorized to order corrective action. All contractor foremen and inspectors will receive training on all specifications and requirements of the project. Environmental compliance procedures will receive special attention during training of contractor foremen and company inspectors. All personnel employed on the project will receive basic training on actions necessary to assure compliance. All personnel employed after the project begins will also receive basic environmental training.

Project management/engineering staff at Northwest will have ultimate compliance responsibility for the project. This group has many years of experience in implementing similar projects under current federal and Washington environmental regulations. If noncompliance occurs, all personnel employed on the project will be made aware of the noncompliance. Training and/or adjustments in current procedures and techniques will be provided to ensure that the same noncompliance does not occur again.

5.4 Preconstruction Planning

Northwest has completed initial agency coordination for this project. Northwest has obtained written recommendations from the Natural Resource Conservation Service (NRCS) regarding

erosion control and revegetation specifications. Snohomish County Noxious Weed Control Board also provided recommendations regarding the prevention of noxious weed introduction and spread.

Northwest does not anticipate the need for off-site disposal of rock, timber, slash or chips other than at existing, approved disposal sites. Merchantable timber will be sold, and unmerchantable timber and slash will be removed from the right-of-way and disposed of in accordance with local regulations. Specific requirements will be addressed in the Washington Department of Natural Resources' Forest Practices Act approval for the project. Some timber and slash may be chipped and used as mulch during reclamation. Because disposal will be limited to existing disposal sites, there will be no need for surveys.

NRCS records regarding drain tiles in the project area are incomplete. Tiles may or may not be present within the construction right-of-way. The only known location of drain tiles is in the tree nursery east of the I-5 crossing. Northwest is continuing to question landowners about the presence of drain tiles on their property. Drain tiles impacted by construction will be returned to their original or better condition. Qualified specialists will conduct repairs and testing. Northwest will not use filter-covered drain tiles without prior approval from the NRCS and the landowner. The pipeline will be buried at a sufficient depth to avoid interference with drain tile systems.

5.5 Typical Pipeline Construction Procedures

5.5.1 Certified Work Areas

Northwest will confine project-related disturbance to the construction right-of-way, temporary extra work areas and temporary access roads. No disturbance will be allowed to occur outside of these areas without appropriate surveys (wetland, cultural, threatened and endangered species, etc.), other federal, state or local permits and prior written approval from FERC.

5.5.2 Construction Right-of-Way Egress and Ingress

Roads that will be crossed by the construction right-of-way are listed on Table 5. The table also lists the roads will be used to access the construction right-of-way. For the most part, roads crossed by the right-of-way will be used for access. Exceptions are I-5, State Highway 9 and those roads that will be crossed by the horizontal directional drills only.

5.5.3 Surveying and Staking

Northwest has surveyed over 95 percent of the pipeline centerline. Northwest continues to work with landowners to gain access to all portions of the lateral pipeline alignment. The exterior right-of-way limits and the boundaries of temporary extra work areas will be staked prior to construction and these stakes will be maintained throughout construction. Prior to the start of construction, the EI will verify the limits of the staked right-of-way of all temporary extra work areas. No road will be widened or otherwise improved to accommodate construction traffic without first completing an environmental analysis and obtaining the appropriate federal, state and local approvals, including written authorization from FERC.

Table 5
Right-of-Way Egress/Ingress Points and Road and Railroad Crossings

Milepost	Road or Railroad Name	Maintained By	Surface Type	Crossing Technique	Used to Access Right-of-Way
0.08	State Highway 92	Washington DOT	Paved	Bore	Yes
0.25	127th Avenue NE	Snohomish County	Paved	Bore	Yes
0.54	TAR-1	Snohomish County	Dirt	Not Crossed	Yes
0.89	TAR-2	Snohomish County	Dirt	Not Crossed	Yes
1.78	44th Street NE	Snohomish County	Chip and Seal	Open Cut	Yes
1.35-1.78	Callow Road/Holly Lane	Snohomish County	Paved	Open Cut	Yes
1.97-2.22	Private Road	Private	Dirt	Open Cut	Yes
2.22	99th Avenue NE	Snohomish County	Paved	Bore	Yes
2.22-2.38	Private Road	Private	Dirt	Open Cut	Yes
2.42	95th Avenue NE	Snohomish County	Paved	Open Cut	Yes
2.71	91st Avenue NE	Snohomish County	Paved	Bore	Yes
2.86	42nd Street NE	Snohomish County	Paved	Bore	Yes
3.11	TAR-5	Private	Dirt	Not Crossed	Yes
3.27	State Highway 92	Washington DOT	Paved	Bore	Yes
3.41	State Highway 9	Washington DOT	Paved	Bore	Yes
3.44-3.76	Densmore Road	Abandoned Road	Paved	Open Cut	Yes
3.77	Soper Hill Road	Washington DOT	Paved	Bore	Yes
3.87	Agilent Driveway	Private	Paved	Open Cut	Yes
4.44	PAR-1	Private	Gravel	N/A	Yes
4.45	TAR-6	Private	Dirt	Not Crossed	Yes
4.46	83rd Avenue NE	Snohomish County	Paved	Horizontal Directional Drill	No
4.47-4.58	24th Street NE	Snohomish County	Paved	Horizontal Directional Drill	No
4.71	79th Avenue NE	Snohomish County	Paved	Horizontal Directional Drill	No
4.83	77th Avenue NE	Snohomish County	Paved	Horizontal Directional Drill	No
4.96	75th Avenue NE	Snohomish County	Paved	Open Cut	Yes
5.21	Sunnyside Boulevard	Snohomish County	Paved	Bore	Yes
5.52	TAR-7	Private	Gravel	Not Crossed	Yes
5.78	Private Field Road	Private	Dirt	Open Cut	Yes
6.06	TAR-8	Private	Dirt	Not Crossed	Yes
7.25	TAR-9 (51st Avenue NE)	Snohomish County	Gravel	Open Cut	Yes
7.50	TAR-10 (Nursery Access Road)	Private	Dirt	Open Cut	Yes
7.52	TAR-11 (Nursery Access Road)	Private	Dirt	Open Cut	Yes
7.56	TAR-12 (Nursery Access Road)	Private	Dirt	Open Cut	Yes
7.73	Nursery Access Road	Private	Dirt	Open Cut	Yes
7.99	Nursery Access Road	Private	Dirt	Horizontal Directional Drill with I-5	Yes
8.01	Interstate 5 (I-5)	Washington DOT	Paved	Horizontal Directional Drill	No
8.05-8.30	Boat Yard Lot	Private	Paved/Gravel	Open Cut	Yes
8.54	Smith Avenue	Private	Dirt/Gravel	Open Cut	Yes
8.63	35th Avenue NE	Snohomish County	Paved	Bore	Yes
8.71	State Highway 529 (north bound lanes)	Washington DOT	Paved	Pass Under Elevated Highway	No
8.72	State Highway 529 (south bound lanes)	Washington DOT	Paved	Pass Under Elevated Highway	No
8.75	Ross Avenue	Snohomish County	Paved	Bore	Yes
8.78	Railroad	Burlington Northern Santa Fe	N/A	Bore	No

5.5.4 Vegetation Clearing

The construction right-of-way consists of four primary types of vegetation ground cover – forested (hardwood and mixed hardwood/conifer), shrubs (primarily in previously-disturbed transmission line corridors and adjacent to roads, etc.), pastures and lowland (floodplain comprised of pasture, wetlands, etc.). Through forested areas the construction right-of-way will be cleared of all timber. Merchantable timber will be sold, and unmerchantable timber and slash will be removed from the right-of-way and disposed of in accordance with local regulations. It is estimated that 911 trees will be cut totaling 147.21 MBF (thousand board feet). Northwest anticipates that wood chips may be used as mulch for this project.

On lands supporting taller shrub-type vegetation cover types (e.g., salmon berry, hard hack, blackberries, etc.), Northwest will clear the right-of-way by mowing or scalping off the tops of the shrubs with a motor-grader or a bulldozer. Lowland and pasture vegetation cover types such as grass, low shrubs or other low growth vegetation will not be cleared except in areas directly over the trench or where grading will be required. The cleared vegetation material will be stored on the edge of the right-of-way and spread back over disturbed areas during final restoration. This material will increase moisture retention and reduce wind and water erosion and is considered by Northwest to be the functional equivalent of mulch and a source of native seed.

Immediately prior to initiating each of the project's HDDs, tru-track wires will be laid by hand along the HDD path to guide the drill head. Behind the drill bit a probe is attached that aids in tracking and steering the down hole drill assembly. This probe is generally a magnetometer-accelerometer system that sends information via a wire in the drill to a computer in the control trailer. To triangulate the probe's location, two insulated guide wires (tru-track wires) approximately 0.25-inch in diameter are laid on the ground surface along the HDD path. Typically, each guide wire is placed offset from the centerline of the HDD alignment at a distance equivalent to approximately one half the depth of the HDD. In some areas a narrow line of site path may be cleared by hand to lay the guide wires on the ground surface, such as in shrub/brush or forested communities. The amount of disturbance to lay the guide wires is similar to the disturbance necessary to conduct initial surveys to obtain a centerline alignment for any pipeline project. Initial surveys include minor hand trimming of vegetation to allow a cleared line of sight path and setting survey stakes and/or monuments. During vegetation trimming, shrubs/brush and some small saplings may be cut by hand but no clearing is required (i.e., no ground or root system disturbance). The approximate alignments of the tru-track wires for each of the HDDs are shown on the Site Plans. Northwest will obtain landowner permission prior to laying the tru-track wires.

5.5.5 Temporary Erosion Control Structures

Temporary erosion controls will be installed immediately after vegetation clearing and will be properly maintained throughout construction and reinstalled as necessary until replaced by permanent erosion controls or restoration is complete. At a minimum, the following temporary erosion control structures will be installed.

Sediment Barriers. To confine sediment to the construction right-of-way, Northwest will primarily rely upon silt fence and staked hay or straw bale structures (see Figures 8, 9 and 10). These structures will be installed at the base of slopes adjacent to road crossings where sediment could flow from the construction right-of-way onto the road surface (see Figure 11). These structures will also be used adjacent to wetland and waterbody crossings.

The EIs will inspect temporary erosion control structures at least on a daily basis in areas of active construction and equipment operation. In areas where active construction and equipment operation are not occurring, inspections will be made at least weekly. All structures will be inspected by an EI within 24 hours of 0.5 inches or greater of rainfall. The EIs will be responsible for ensuring that ineffective temporary erosion control measures are repaired within 24 hours of discovery.

Temporary sediment barriers will be maintained in place until permanent revegetation measures are successful or the upland areas adjacent to wetlands, waterbodies or roads are stabilized. The structures will be removed once the area has been successfully restored

Temporary Slope Breakers. Northwest will install temporary slope breakers over the backfilled, recontoured right-of-way. The outfall of each temporary slope breaker will be to a stable, well-vegetated area or to an energy-dissipating device at the end of the slope breaker and off the construction right-of-way (see Figure 12). Northwest has received a written recommendation from the NRCS regarding spacing of temporary and permanent slope breakers. NRCS recommends that slope breakers be spaced by dividing the percent slope into 1000. For instance, if the slope is 10 percent, slope breakers would be spaced on 100 foot centers (1000/10).

Mulch. If it becomes necessary to delay final cleanup, including final grading and installation of permanent erosion control measures, beyond 10 days after the trench is backfilled in a specific area, Northwest will apply mulch to the disturbed areas before seeding. Mulch will also be applied if construction and restoration activity is interrupted for extended periods. In these cases mulch will be applied at a rate of 3 tons/acre on all slopes within 100 feet of waterbodies and wetlands.

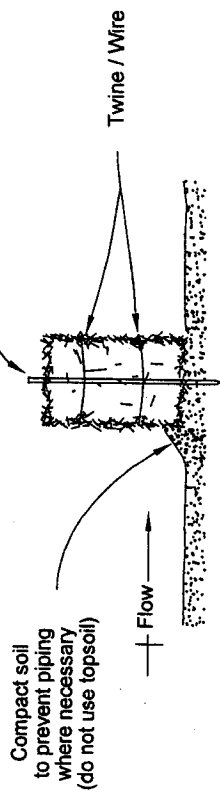
A few areas will be crossed which have slopes in excess of eight percent. In these areas mulch will be applied uniformly over the area to cover at least 75 percent of the ground surface at a rate of two tons/acre of straw or hay or its equivalent.

If a mulch blower is used, the strands of the mulch will be at least eight inches long to allow for sufficient anchoring. Anchoring will be completed using a mechanical mulch-anchoring tool that will crimp the mulch to a depth of two to three inches. Liquid mulch binders are not expected to be utilized unless hydromulch is applied. Liquid binders will not be used in wetlands or waterbodies.

As was stated earlier, Northwest anticipates that wood chips may be used for mulch for this project. If they are used, no more than one ton per acre will be applied. The equivalent of 11 lbs/acre of available slow release nitrogen will be applied where wood chips are used.

Erosion Control Fabric. Northwest will install erosion control fabric (such as jute or excelsior) on waterbody banks at the time of recontouring. The fabric will be anchored using staples or other appropriate devices.

2" x 2" x 3' Wood Stake



EMBEDDING DETAIL

Notes:

Contractor shall use certified noxious weed free hay or straw.

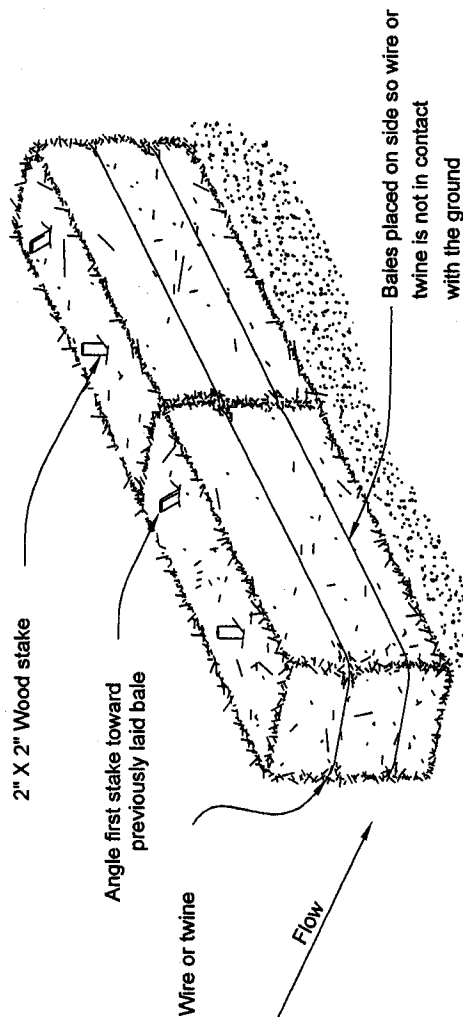
Entrench straw bales a minimum of 4 inches into the ground except in frozen ground or if used with silt fence.

Use wood stakes whenever possible. Steel rebar may be used when soil conditions are frozen or rocky. Stakes should be driven a minimum of 12 inches into the ground.

Bale barriers shall be left in place until permanent vegetation cover is established.

When removing bales scatter silt over right-of-way.

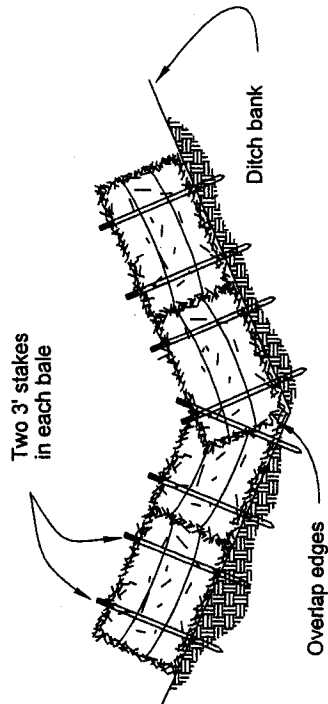
If bales are not needed for sediment control during reclamation, straw may be used as mulch.



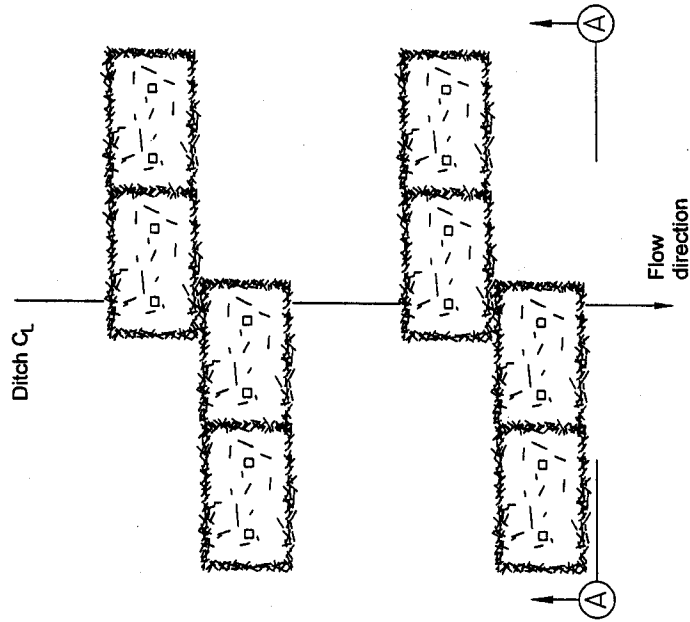
ANCHORING DETAIL

FIGURE 8
STRAW BALE SEDIMENT BARRIER INSTALLATION

SECTION A-A



PLAN VIEW



Notes:

Place straw bale sediment barriers in small intermittent drainages or road ditches that may convey sediment laden runoff from the right-of-way during storm events.

Drive stakes a minimum of 12 inches into the ground.

Use wood stakes whenever possible. Steel rebar may be used when soil is frozen or rocky.

Silt fence fabric may be used.

Sediment control structures can be placed off the construction right-of-way by hand if the location has been approved by the Environmental Inspector.

FIGURE 9
SEDIMENT CONTROL IN DITCHES AND SWALES

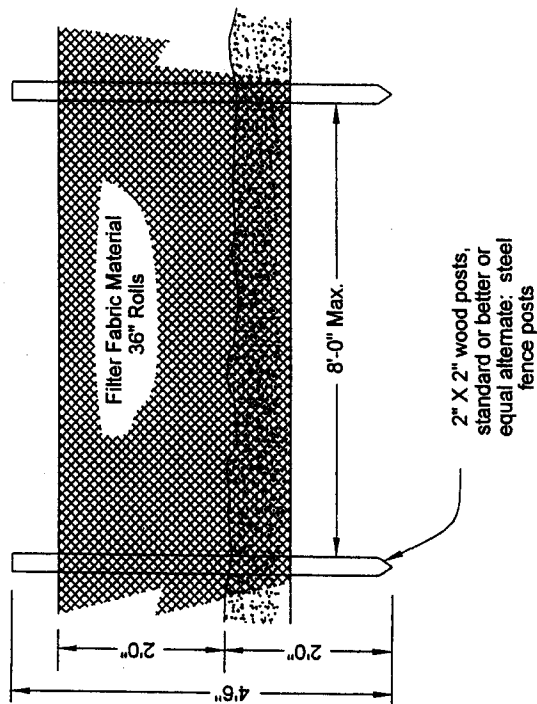


Diagram illustrating the cross-section of a trench installation for a wood or steel post. The diagram shows the following components and dimensions:

- Wood or steel post**: The vertical structure being installed.
- Staple or wire (prefabricated pockets minimize maintenance)**: Used to secure the filter fabric to the post.
- Filter fabric material**: A layer of material placed around the post.
- Manually compacted backfill**: The material filling the trench around the post.
- 4" Min.**: The minimum thickness of the filter fabric and backfill layer.
- 4" X 4"**: The dimensions of the trench.
- Bury bottom of filter material in 4" X 4" trench**: The instruction to bury the bottom of the filter material in the trench.
- 6"**: The width of the post.
- 20"**: The width of the trench.

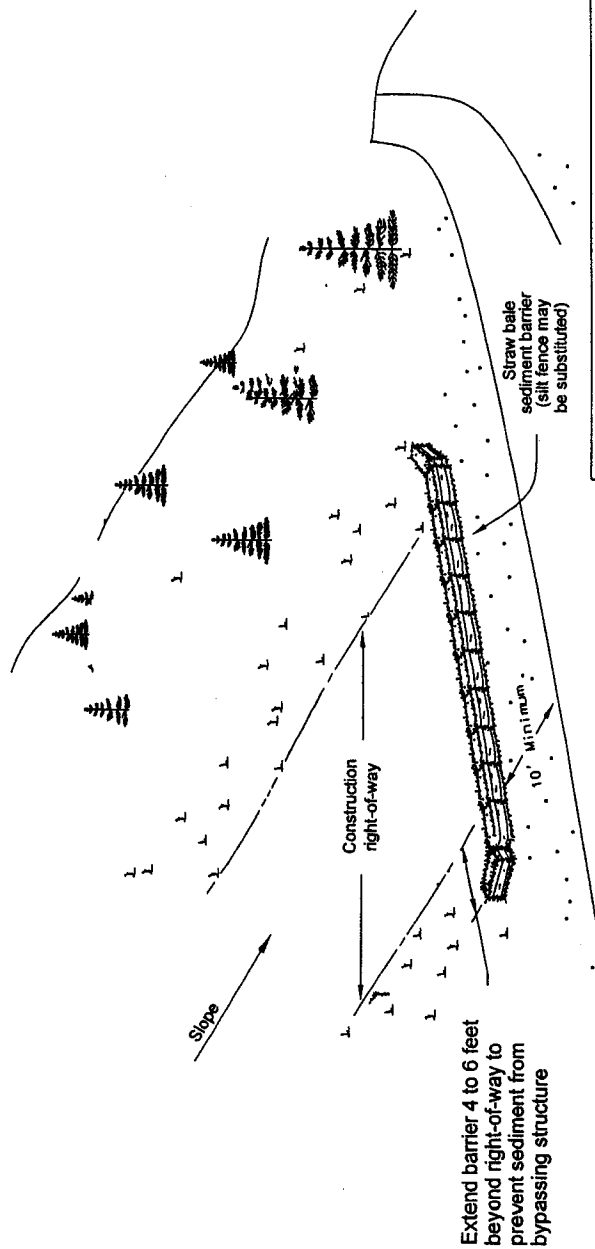
1. Install silt fence after vegetation clearing and immediately after soil disturbance:
 - at appropriate locations to prevent siltation into waterbodies, wetlands or roads crossed by the construction right-of-way
 - to prevent stockpiled soil or spoil from leaving the work area
2. Filter fabric shall be installed to filter sediment from surface runoff.
3. Installations shall be periodically checked, and if flow is obstructed, build-up of sediment shall be removed.
4. Filter fabric shall be left in place until permanent vegetative cover is established unless removal is authorized by company representative.
5. Filter fabric shall be replaced whenever it has deteriorated to such an extent that it reduces effectiveness of the filter fabric.
6. Filter fabric shall be placed to follow (run parallel to) the contours.
7. On upslope installations, both ends of the filter fabric shall be turned and extended upslope.
8. Filter fabric shall be constructed of Exxon GTF-180 fabric or a similar fabric with a tensile strength at 20% (Max.) elongation of 50 LB. Linear Inch or greater.
9. Area disturbed as a result of removing the filter fabric shall be restabilized by seeding in accordance with the Revegetation Plan.

**FIGURE 10
SILT FENCE INSTALLATION**

Notes:

Driving around sediment barriers is prohibited. Remove and replace barrier for access to right-of-way.

Install barriers off the right-of-way by hand only at location approved by Environmental Inspector.



Option: Drivable Berm

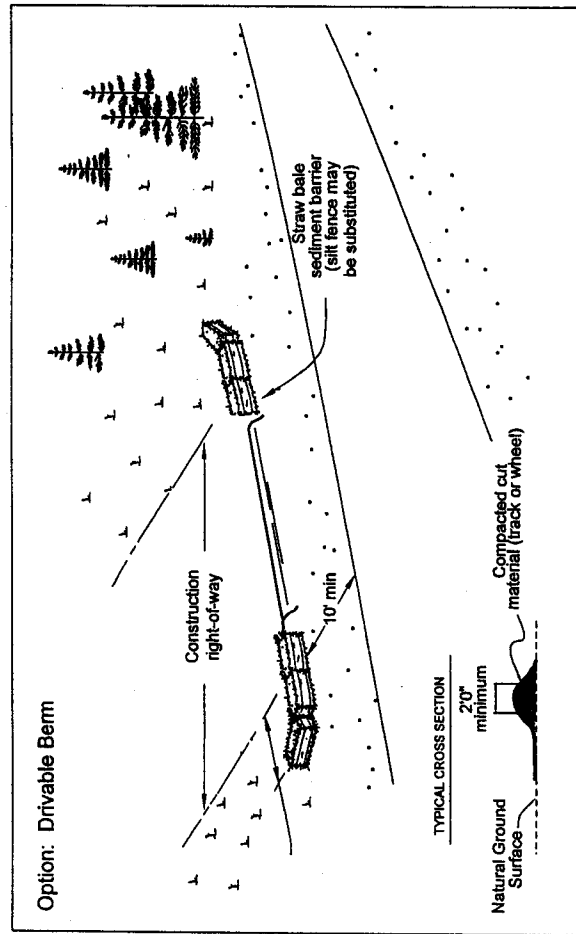


FIGURE 11
TEMPORARY SEDIMENT BARRIERS / DRIVABLE BERMS
ADJACENT TO ROAD CROSSINGS

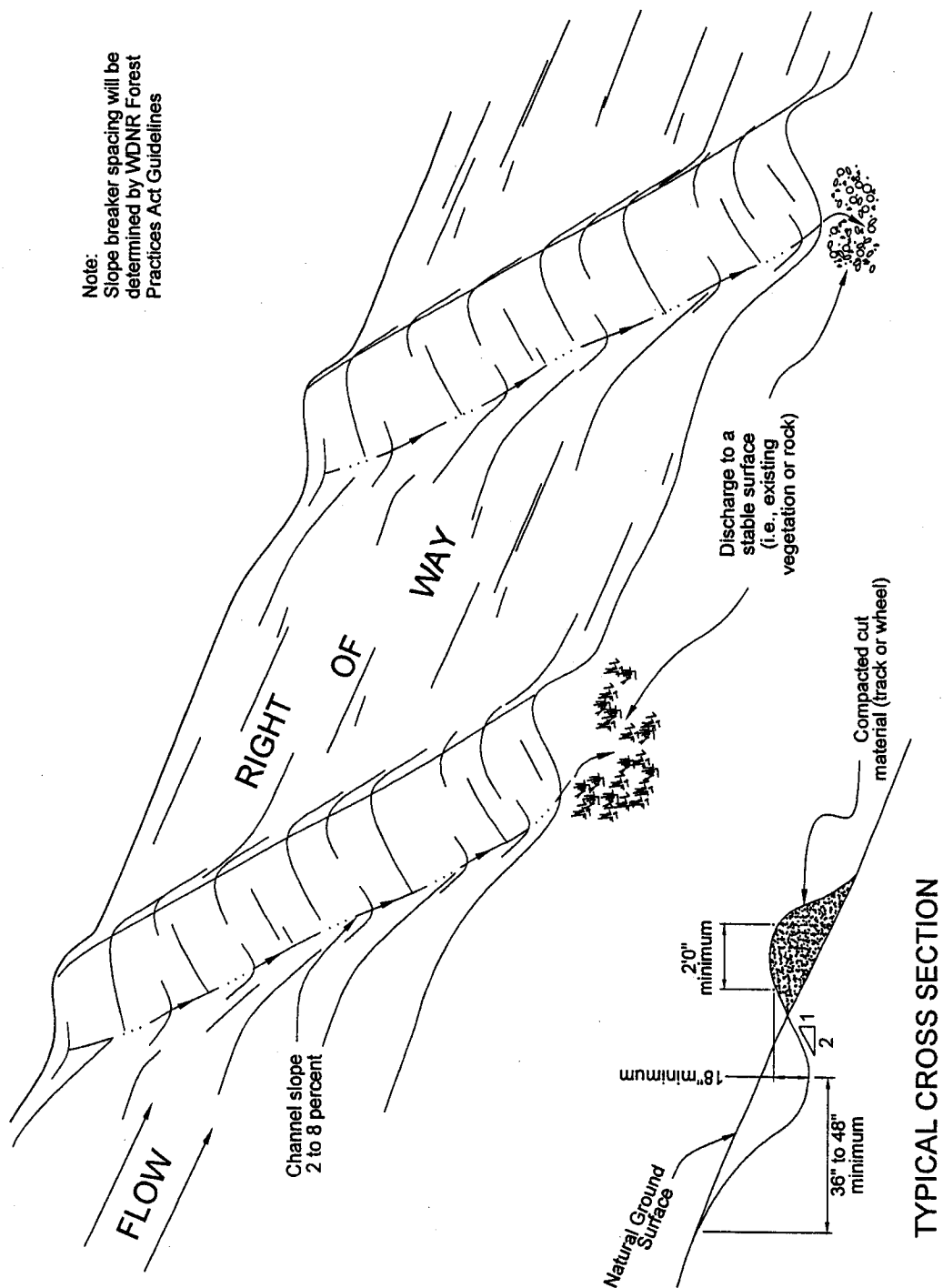


FIGURE 12
TEMPORARY AND PERMANENT SLOPE BREAKERS

5.5.6 Topsoiling

FERC's Plan (Section V.B.1) requires topsoil segregation in 1) all residential areas, 2) annually cultivated or rotated agricultural lands (pasture is excluded), 3) hayfields and 4) other areas at the landowner's request. In these areas FERC's Plan (see Appendix B) requires either full work area or trenchline and subsoil storage area stripping (see Section V.B.2 of FERC's Plan). FERC's Procedures (Section VI.C.2.g of Appendix C) address topsoiling in wetlands. In wetland areas FERC generally requires the top 12 inches over the trenchline to be salvaged, except in areas where standing water or saturated soils are present.

The pipeline will not cross any annually cultivated or rotated agricultural areas. However, a few residential areas will be crossed. Also, on the east side of Ebey Slough the pipeline will cross a native hayfield and several wetlands. Topsoiling will be conducted at the locations, as follows:

Residential Areas. Much of the project area contains residences in a rural setting on small acreage parcels (one to two acres or more). Many of these parcels have landscaped yards near the residences, but the majority of the parcel consist of woodlots, mowed pasture or other grass-type covered open lands. Northwest does not consider the portion of a parcel that is wooded or pasture as residential. Only that portion of a parcel landscaped and maintained as lawn near a residence is considered residential. The distinction is important as it applies to topsoil requirements.

FERC's Plan states that topsoil replacement is an acceptable alternative to topsoil segregation in residential areas. To keep the size of the right-of-way to a minimum, particularly adjacent to residences, Northwest proposes to restrict topsoil segregation in residential areas to just the trenchline. In residential areas, topsoil will be imported as necessary to assure adequate reclamation. All topsoil imported for reclamation will be inspected by the EI prior to use.

Native Hayfields. The area immediately east of Ebey Slough is a native hayfield. However, much of the area used for hay production that will be crossed by the pipeline also qualifies as a wetland. Northwest proposes to only strip topsoil in this hayfield over the trenchline, which is consistent with FERC's Procedures but deviates from FERC's Plan. FERC's Plan (see Section V.B.2) requires topsoil to be stripped from the full right-of-way or trenchline and the subsoil storage area in hayfields. If full right-of-way topsoiling was to occur in the hayfield, Northwest believes a much wider right-of-way (up to 100 feet) will be necessary on this portion of the floodplain and that unnecessary damage would occur to the wetlands within the hayfield. Similarly, if trench plus spoilsides topsoiling occurs, up to an additional 20 feet of excavation disturbance within the wetland is likely. By limiting topsoiling to just over the trenchline, Northwest believes impacts to the wetlands will be minimized without significantly affecting the production capacity of the hayfield.

Wetlands. Twelve inches over the trenchline will also be salvaged in wetlands, except in areas where standing water or saturated soils are present. Where such areas are encountered during construction, topsoil will not be salvaged. It is important to note that saturated soils and standing water are most likely in the area between Union and Ebey sloughs between MP 6.35 and 7.08. However, because Northwest has agreed to drill these crossings, the chance of encountering these saturated soil conditions or standing water has been significantly reduced. It is likely that saturated soils will be encountered at the crossing of Catherine Creek at MP 1.32. Peat is present on both banks of the creek crossing. It may not be possible to salvage topsoil from the wetlands on either side of the creek crossing.

5.5.7 Trenching and Backfilling

The depth of the trench will be sufficient to allow for at least four feet of cover on top of the pipe in normal soils. Where possible, a minimum cover of five feet will be achieved at stream crossings. Rivers and sloughs will be drilled. Crossing depths for roads and railroads will be determined by the managing agency/owner.

After trenching is complete, the pipe sections will be strung along the trench, bent to fit the contour of the trench bottom, aligned, welded together and placed on temporary supports along the edge of the trench. If necessary, all welds will be visually and radiographically inspected and repaired. Line pipe, normally mill-coated or yard-coated prior to stringing, will also require a coating at the welded joints prior to final inspection. The entire pipeline coating will be electronically inspected to locate and repair any faults or voids. The pipe assembly will then be lowered into the trench by side-boom tractors, and the trench will be backfilled using a backfilling machine or bladed equipment. No foreign substance, including skids, welding rods, containers, brush, trees or refuse of any kind, will be permitted in the backfill.

Trench breakers will be installed at the base of slopes adjacent to wetlands and waterbodies and where needed to avoid draining of wetlands (see Figure 13). It is likely that Northwest will utilize sandbags for trench breaker construction. Topsoil will not be used to fill the bags. However, Northwest may substitute a trench plug constructed of bentonite at appropriate locations to prevent flow from wetlands or streams into the trench.

5.5.8 Hydrostatic Testing

After backfilling, the pipeline will be hydrostatically tested in accordance with DOT regulations to ensure that the system is capable of operating at the design pressure. Should a leak or break occur, the line will be repaired and retested until the specifications are achieved. Withdrawal and discharge of hydrostatic test water is not expected to impact surface waters for two reasons. First, Northwest has committed to obtain hydrostatic test water from a municipal or commercial source. Northwest will not withdraw water from surface water without prior approval from WDOE. Second, Northwest will discharge test water to an upland area for infiltration or to sanitary or storm sewers.

5.6 Cleanup and Permanent Erosion Control Devices

Northwest will make every effort to complete final cleanup of an area within ten days after backfilling the trench. Final cleanup will include final grading and installation of permanent erosion control structures. In no case will Northwest delay final cleanup beyond the end of the next recommended seeding season. During final cleanup Northwest will remove all construction debris from the right-of-way and grade the right-of-way to preconstruction grade to the extent practicable. An adequate seedbed will be prepared at the conclusion of cleanup.

Travel Lane. Because of the restricted nature of the construction right-of-way in several areas, Northwest anticipates it will be necessary to leave a travel lane open over extended portions of the construction right-of-way. As soon as access is no longer required, the travel lane will be closed and the disturbed area reclaimed. To reduce erosion in the travel lane, Northwest will apply all of the temporary erosion controls discussed above in Section 1.5.5.5 in areas where the travel lane is temporarily left open.

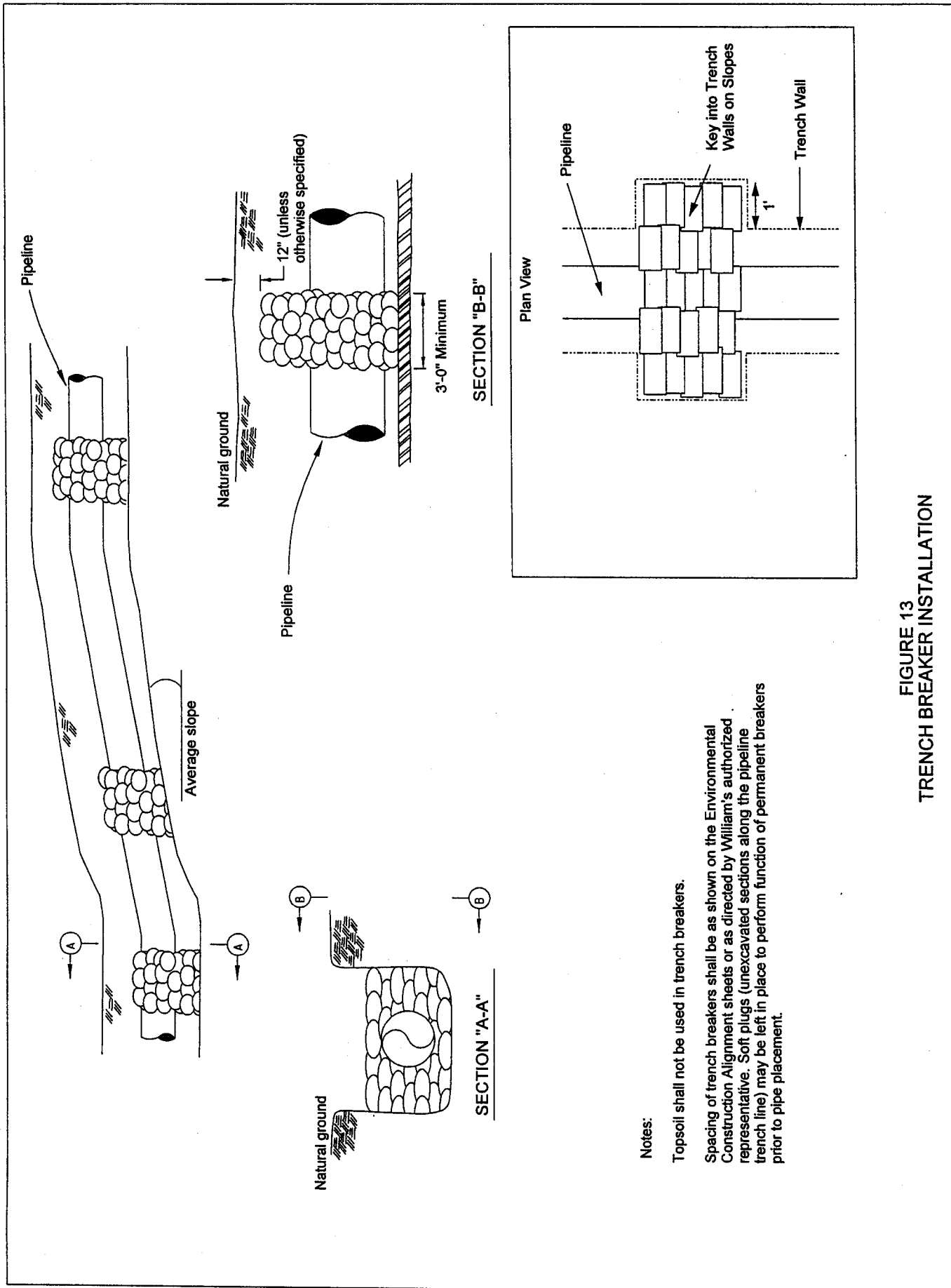


FIGURE 13
TRENCH BREAKER INSTALLATION

Excess Rock Removal. FERC's Plan (see Section VI.A.4) requires the removal of excess rock from the top 12 inches of soil to the extent practicable in all rotated and permanent croplands, hayfields, pastures, residential areas and other areas at the landowner's request. Northwest will comply with FERC's Plan in pastures, hayfields and residential areas. In these areas, Northwest will cleanup excess rock to a condition similar to adjacent portions of the construction right-of-way. Northwest will make diligent efforts to remove rock greater than four inches if the off right-of-way areas do not contain rock greater than four inches.

Slope Breakers. Northwest will install permanent slope breakers consistent with the requirements of Section VI.B.2 of FERC's Plan. Slope breakers will be installed as shown on Figure 9. Slope breakers will be installed with a two to eight percent outslope, and flow will be diverted to a stable area. If a stable area is not present, an energy-dissipating device will be installed off the edge of the right-of-way.

Soil Compaction. Northwest will test for soil compaction in residential areas and in the temporary extra work area in the hayfield used for drill rig set up for the directional drill of the sloughs. Tests will be conducted on the same soil type under similar moisture conditions as specified in Section VI.C. of FERC's Plan. Pursuant to Section III.B.7 of FERC's Plan, the EI will be responsible for conducting subsoil and topsoil compaction testing and determining corrective measures.

Typically, FERC's Plan requires compaction testing and relief in the entire hayfield east of Ebey Slough. However, the hayfield is also a wetland and deep plowing the wetland portions of the hayfield would result in significant adverse impacts to the wetland functions. Therefore, Northwest does not intend to conduct compaction relief in the hayfield except as noted above. Rather, wetland construction procedures will be used which will minimize impacts associated with compaction.

5.7 Revegetation

Northwest has consulted with the NRCS regarding specific seeding dates and recommended seed mixtures for the project area. NRCS recommends, based on their critical area planting requirements, the seed mixture shown in Table 6 in upland and wetland areas:

Table 6 Upland and Wetland Seed Mixture Recommended by the Natural Resource Conservation Service for the Everett Delta Lateral Project	
Species	Application Rate
Annual ryegrass	25 lbs/acre
Creeping red fescue	20 lbs/acre
Tall fescue	10 lbs/acre
White clover	3 lbs/acre

A seedbed will be prepared in disturbed areas to a depth of three to four inches using appropriate equipment to provide a firm seedbed. Weather and soil conditions permitting, disturbed areas will be seeded within six working days of final grading. All seeding rates will be based on pure live seed, and seed will be used within 12 months of seed testing. Seeding will be conducted using a seed drill, broadcast and hydroseeding according to the guidelines in FERC's Plan (see Section VI.D.i).

Northwest will work with individual landowners to address restoration of lawns, ornamental shrubs, gardens and other landscaping. Northwest will utilize contractors familiar with local horticultural and lawn establishment procedures for residential reclamation work. Specific reclamation procedures will be determined during negotiations with individual landowners.

5.8 Road Crossings

During construction across roadways, Northwest will comply with requirements of the state or county agency responsible for permitting the road crossing. Roads will be either bored or open-cut (see Table 5). Typically, dirt or gravel surfaced roads will be open-cut, the pipeline installed, the road repaired and the crossing completed within one day. If additional repair of the road is required, final repair will be completed during cleanup. Crossings at paved roads will typically be made by horizontal boring at a minimum depth beneath the surface of the road specified by the appropriate regulatory agency.

5.9 Waterbody Crossings

A complete list of waterbody crossings is provided in Table 7. The table provides the name of the stream, the approximate milepost of the crossing and the waterbody type (i.e., perennial or intermittent). The determination of waterbody type was based on 7.5-minute topographic maps and field investigations. Supplementary information (including additional streams and local stream names) was provided by Snohomish County. Stream size, as defined by FERC's definitions in Section I.C of the Procedures, is also included on the table.

All the lateral pipeline crossings of waterbodies will be made at nearly perpendicular to the axis of the waterbody channel. In addition, the pipeline has not been routed within 15 feet or less parallel to any waterbody. Also, Northwest has been successful in designing each crossing such that extra work areas are not closer than 50 feet from waterbody boundaries.

Minor and Intermediate Waterbodies. During construction adequate flow rates will be maintained to protect aquatic life and prevent the interruption of existing downstream uses. If water is present in the streambed at the time of construction, Northwest intends to flume crossings of all minor and intermediate waterbodies (less than 100 feet in width) with a fishery value consistent with the requirements of Section V.B.7 of FERC's Procedures. Fluming procedures that will be applied to these streams are outlined in Appendix D.

Except for the horizontal directional drills, hazardous materials, chemicals, fuels and lubricating oils will not be stored or concrete coating activities performed within 100 feet of any waterbody/wetland (whether flowing or not at the time of construction) unless the measures outlined in the SPCC Plan (see Appendix E) are implemented. Similarly, with the exception of the horizontal directional drills, Northwest will not refuel construction equipment within 100 feet of any waterbody/wetland (whether flowing or not at the time of construction) unless the measures outlined in the SPCC Plan (see Appendix E) are implemented.

If water is present in the streambed at the time of construction, only clearing equipment will be allowed to cross waterbodies before installation of the equipment bridge. The number of such crossings will be limited to one per piece of equipment. All other construction equipment will only cross waterbodies with water in the streambed using equipment bridges. Equipment bridges will not be installed on intermittent waterbodies which are dry at the time of construction. However, if a storm occurs which results in water in the streambed of the otherwise intermittent waterbody, no equipment will cross the waterbody until the stream dries up or a bridge is installed.

Table 7
Waterbodies Which will be Crossed by the Lateral Pipeline

Waterbody Name	Milepost	Flow	Crossing Width (feet)	State Water Quality Classification	Stream Type ¹
Wetland 4.1 Drainage Feature	0.56	Intermittent	3	A	5
Catherine Creek	1.32	Perennial	3	A	3
Lundeen Creek	2.13	Intermittent	No defined channel	AA	4
Upper Stevens Creek	2.42	Perennial	2	AA	4
Wetland 23 Drainage Feature	3.05	Intermittent	3	AA	5
Unnamed Tributary to Black Rock Creek	4.78	Intermittent	2	AA	4
Ditch	5.38	Perennial	2	A	1
Ditch	5.42	Perennial	1	A	1
Ditch	5.47	Perennial	4	A	1
Ditch	5.48	Perennial	4	A	1
Ditch	5.53	Perennial	6	A	1
Ditch	5.62	Perennial	4	A	1
Ditch	5.66	Perennial	4	A	1
Ditch	5.66	Perennial	4	A	1
Hulbert Creek	5.69	Perennial	3	A	1
Unnamed Tributary to Hulbert Creek	5.75	Perennial	5	A	1
Ditch	5.78	Perennial	3	A	1
Unnamed Tributary to Ebey Slough	5.93	Perennial	12	A	1
Ditch	6.20	Perennial	3	A	1
Ebey Slough	6.46	Perennial	158	A	1
Steamboat Slough	6.53	Perennial	557	A	1
Steamboat Slough	6.80	Perennial	695	A	1
Union Slough	7.01	Perennial	114	A	1
Ditch	7.04	Intermittent	3	A	1
Ditch	7.17	Perennial	3	A	1
Unnamed Tributary to Union Slough	7.30	Intermittent	3	A	1
Ditch	7.36	Intermittent	4	A	1
Ditch	7.38	Intermittent	4	A	1
Ditch	7.51	Intermittent	5	A	1
Johnson Slough	7.57	Perennial	6	A	1
Ditch	7.99	Intermittent	4	A	1
Snohomish River	8.91	Perennial	1,020	A	1

¹ All waterbodies within the Snohomish County designated shoreline environments are Type 1.

Bridges will be designed and maintained to withstand and pass the highest flow that will occur while the bridge is in place. Bridges will be maintained to prevent soil from entering the streams, and equipment bridges will be removed as soon as possible after permanent seeding.

Sediment barriers will be installed immediately after initial disturbance of the waterbody or adjacent upland as shown on Figure 14. Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench) until replaced by permanent erosion controls or restoration of adjacent upland areas is complete.

All streams will be backfilled with material removed from the trench. However, Northwest will use clean gravel or native cobbles for the upper one-foot of trench backfill in all the intermittent and perennial waterbodies crossed east of Sunnyside Boulevard. If gravel or cobbles are present in waterbodies crossed between Ebey Slough and Sunnyside Boulevard, it will be replaced during backfill. Banks will be stabilized and temporary sediment barriers installed within 24 hours of completing the crossing. All banks will be returned to preconstruction contours.

Major Waterbodies. All major waterbodies (Ebey, Steamboat and Union Sloughs and the Snohomish River) will be crossed using an HDD. Sections 1 and 2 of the Supplemental Volume contain site-specific plans for the crossings of these major waterbodies (see Figures 3 and 4).

Maintenance. During operation of the pipeline, vegetation maintenance will be limited adjacent to waterbodies to allow a riparian strip at least 25 feet wide, as measured from the waterbody's mean high water mark, to permanently revegetate with native plant species across the entire right-of-way. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to ten feet wide will be maintained in a herbaceous state. In addition, trees that are located within 15 feet of the pipeline and that are greater than 15 feet in height will be cut and removed from the right-of-way. Herbicides or pesticides will not be used in or within 100 feet of a waterbody.

5.10 Wetland Crossings

In most cases, Northwest has narrowed the width of the construction right-of-way through jurisdictional wetlands to less than 75 feet. Wetlands crossed by or in close proximity to the pipeline are shown on the wetland drawings provided in Appendix B of the Critical Areas Study. These wetland drawings show the right-of-way configuration through each wetland. No aboveground facilities will be located within wetlands.

With the exception of the locations outlined in Section 1.6 of this appendix, all temporary extra work areas have been located at least 50 feet away from wetland boundaries. Clearing of vegetation will be limited between extra work areas and the edge of the wetland to the certified construction right-of-way.

Except for the proposed temporary access road to the slough drill rig discussed in Section 1.6, the only access roads, other than the construction right-of-way, that will be used in wetlands are those existing roads that can be used with no modification and no impact on the wetland.

Where water and other site conditions allow, Northwest will assemble the pipeline in an upland area and use "push-pull" or "float" techniques to place pipe in the trench. The duration of construction-related disturbance within wetlands will be minimized and construction equipment

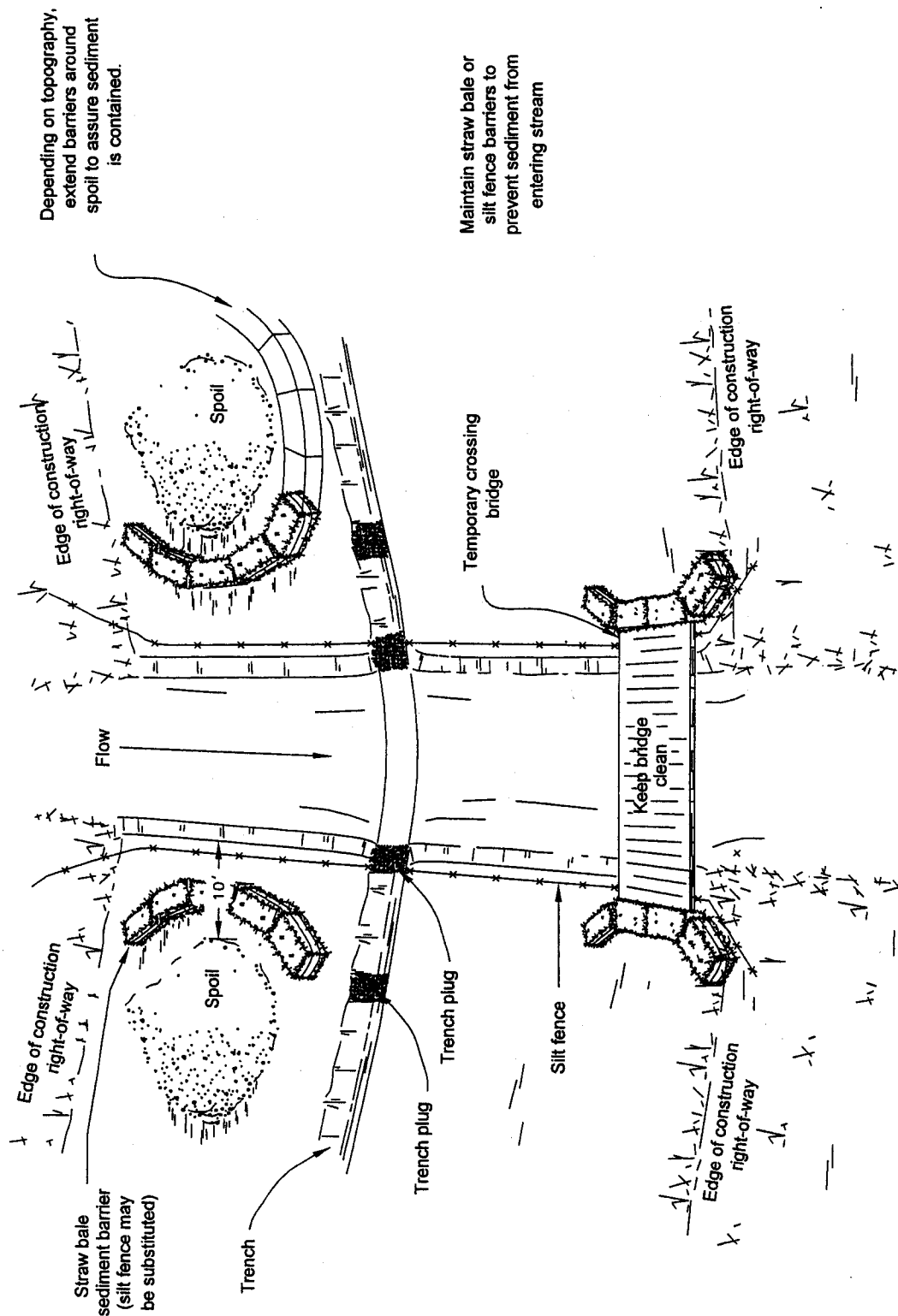


FIGURE 14
SEDIMENT BARRIER INSTALLATION AT
STREAM CROSSINGS DURING CONSTRUCTION

operating in wetland areas limited to that needed to clear the right-of-way, dig the trench, fabricate and install the pipeline, backfill the trench and restore the right-of-way. All other construction equipment will use access roads located in upland areas to the maximum extent practicable. Where access roads in upland areas do not provide reasonable access, Northwest will limit all other construction equipment to one pass through the wetland using the right-of-way.

Vegetation in wetlands will be cut off at ground level, leaving existing root systems in place. Pulling of tree stumps and grading activities will be limited to directly over the trench. Northwest will not grade or remove stumps or root systems from the rest of the right-of-way in wetlands.

The top one-foot of topsoil will be segregated from the area disturbed by ditching in wetlands, except in areas where standing water or saturated soils are present. After backfilling is complete, the segregated topsoil will be returned to its original location.

Rock, soil imported from outside the wetland, tree stumps or brush riprap will not be used to stabilize the right-of-way in wetlands. If standing water or saturated soils is present, low-ground-weight construction equipment or normal equipment operating on timber, prefabricated equipment mats or geotextile fabric overlain with gravel will be used. Geotextile fabric used for this purpose will be strong enough to allow removal of all gravel and fabric from the wetland. Northwest will not cut trees outside of the construction right-of-way to obtain timber for riprap or equipment mats and will attempt to use no more than two layers of timber riprap to stabilize the right-of-way. All timber riprap, prefabricated equipment mats, geotextile fabric and overlying gravel will be removed upon completion of construction.

Sediment barriers will be installed immediately after initial disturbance of the wetland or adjacent upland. Sediment barriers will be properly maintained throughout construction and reinstalled as necessary (such as after backfilling of the trench). Where necessary, sediment barriers will be installed across the entire construction right-of-way immediately upslope of the wetland boundary to prevent sediment flow into the wetland. Where wetlands are adjacent to the construction right-of-way, sediment barriers will be installed along the edge of the construction right-of-way, as necessary, to prevent sediment flow into the wetland. These sediment barriers will be removed during right-of-way cleanup.

Where the pipeline trench may drain a wetland, trench breakers will be installed and/or the trench bottom sealed as necessary to maintain the original wetland hydrology. A permanent slope breaker and a trench breaker will be installed at the base of slopes near the boundary between the wetland and adjacent upland areas. The trench breaker will be installed immediately upslope of the slope breaker.

Fertilizer, lime or mulch will not be used in wetlands. Revegetation will use the seed mixture recommended by the NRCS and specified in Table 6. Herbicides or pesticides will not be used in or within 100 feet of a wetland.

Vegetation maintenance will not be conducted over the full width of the permanent right-of-way in wetlands. However, to facilitate periodic pipeline corrosion/leak surveys, a corridor centered on the pipeline and up to ten feet wide will be maintained in a herbaceous state. In addition, trees within 15 feet of the pipeline and that are greater than 15 feet in height will be selectively cut and removed from the right-of-way.

6.0 Variances from FERC's Plan and Procedures

Although Northwest can comply with FERC's Plan and Procedures over the majority of the pipeline route, there are a few locations where compliance is not possible and/or environmentally desirable. These locations are summarized below and in Table 8:

The alignment within the Centennial Trail, which was required by the FERC Certificate, will be adjacent to a number of wetlands which are shown on Site Plan 1. Northwest has reduced the construction right-of-way width to approximately 40 feet (from 75 feet) in order to minimize direct disturbance within the wetlands. However, this narrow construction right-of-way width will necessitate temporary extra work areas directly adjacent (less than 50 feet) to the wetlands for spoil storage and to make up the drag section for the wetlands. Consequently, temporary extra work areas at the following mileposts will be closer than 50 feet from wetlands: 0.25, 0.54, 0.60, 0.71. Although placing the temporary extra work areas closer than 50 feet may require a variance from FERC's Procedures, locating them as shown on Site Plan 1 will significantly reduce direct construction-related disturbance within the wetlands.

Northwest intends to drill the crossings of Ebey, Steamboat and Union sloughs (see Section 1 of the Supplemental Volume). To do so, Northwest will be required to place temporary extra work areas in wetlands on both sides of the drilled crossing. The locations of these work areas are shown on Site Plan 6. Northwest believes the environmental benefits achieved from drilling the sloughs far outweighs the temporary impacts from work areas within the wetlands. Nonetheless, locating the work areas in the wetlands will require FERC approval. Similarly, it will be necessary to fuel the drill rig on the east side of the crossing. Fuel delivery will be required daily. Because the rig cannot be moved, fueling will be required in the wetland/hayfield. Northwest requests that FERC waive the no-fueling requirement in wetlands to accommodate the drill rig.

The pullback temporary extra work area for the slough drills is shown on Site Plan 7. The extra work area will cross two wetlands that are associated with Johnson Slough (MP 7.57) and a ditch (MP 7.51). Northwest will span over both the wetlands by elevating the pullback pipe on rollers. No direct impact will occur to either wetland. These wetlands cannot be avoided without segmenting the pullback pipeline into numerous short sections. Doing so would require the pull to be stopped several times for sections to be welded together. Stopping the pull-back would significantly increase the risk of the pipe becoming stuck in the drill hole.

Section VI.C.1.e of FERC's Procedures restricts the use of access roads in wetlands to only those existing roads that can be used without modification or impact to the wetland. Access is severely restricted between Sunnyside Boulevard at MP 5.21 and the drill rig temporary extra work area directly adjacent to Ebey Slough at MP 6.35. An existing dirt road crosses the pipeline at approximately MP 5.78, about halfway between Sunnyside Boulevard and the drill rig set up area. However, there is currently no ingress/egress point between that access road and the drill rig temporary extra work area (see Site Plans Sheets 5 and 6). If additional access is not provided, all construction traffic and the pipe stringing trucks will be required to travel down the construction right-of-way to the drill rig temporary extra work area, turn around and proceed back down the construction right-of-way about 3,300 feet before they can exit onto the existing access road. Nearly all of this route will traverse wetlands as well as cross a number of ditches and the unnamed tributary to Ebey Slough. During the horizontal directional drill it will be necessary for daily worker traffic to utilize the same route. Fuel trucks will be required to make daily deliveries to the drill rig using this route. Delivery trucks will utilize this route weekly. Most importantly, however, it will be necessary to haul the 70,000-pound drilling rig into and out of the

temporary extra work area using this route. In addition, the directional drill will occur before the construction spread reaches the floodplain. Therefore, it will be necessary to clear the construction right-of-way and build a suitable road capable of supporting the drilling rig well in advance of actual construction through the wetlands. For these reasons, Northwest requests FERC approve construction of a new temporary access road, not within the construction right-of-way, through the wetland/hayfield (as shown on Site Plan 5) to allow access to the drilling rig.

Under normal circumstances, FERC requires compaction relief in hayfields. However, because the hayfield east of Ebey Slough is also a wetland, Northwest requests FERC approve a variance to its Plan and restrict compaction relief (if necessary) to only the temporary extra work area associated with the drill rig.

FERC's Plan typically requires at least trench and spoil side topsoiling in hayfields. However, because the hayfield east of Ebey Slough is also a wetland, Northwest requests FERC waive its Plan requirement and restrict topsoiling in the hayfield/wetland to the ditchline only, consistent with the Procedures.

7.0 Operations and Maintenance

Northwest will test, operate and maintain the proposed pipeline facilities in accordance with 49 CFR Part 192 and other applicable federal and state regulations. The pipeline right-of-way will be clearly marked where it crosses public roads, railroads, rivers, fenced property lines and other locations as necessary. All pipeline facilities will be marked and identified in accordance with applicable regulations.

No herbicides will be used to control vegetation on the permanent right-of-way. Vegetation at the aboveground facilities will be periodically maintained using commercial mowing, cutting, trimming and the selective use of herbicides. All use of herbicides at aboveground facilities will be in strict accordance with federal, state and local regulations.

Repair of erosion control structures, drain tiles and replacement of backfill will be conducted where necessary. Waterbody crossings will be inspected periodically. A supply of emergency replacement pipe, leak repair clamps, sleeves and related materials will be maintained for repair activities. Monitoring and maintenance of the cathodic protection system will be accomplished in compliance with the appropriate DOT regulations. Problems detected through the monitoring program will be corrected promptly and checked in a follow-up survey no later than 12 months after the initial discovery.

Recording and transmitting pressure and temperature data will be controlled and/or monitored by Northwest's central gas control center in Salt Lake City.

8.0 Future Plans and Abandonment

Northwest currently has no future plans to expand any of the proposed facilities or to abandon the proposed aboveground facilities. However, Northwest is specifically seeking pregranted approval from FERC for Northwest to abandon its operation of the proposed lateral facilities as part of its interstate transmission system, with such abandonment to be effective five years from the in-service date of the facilities. Upon Northwest's abandonment, PSE will assume operation of the lateral facilities as part of its intrastate gas system.

Table 8
Previously Unidentified Variance Requests to the FERC Procedures (12/2/94 version) for the Everett Delta Lateral Project

Variance	Milepost	Site Plan	Reason for Variance
TEWA 0.1 will be located less than 50 feet (21.4 feet) from Wetland 1	0.00	1	TEWA 0.1 is necessary to access the Everett Delta Meter Station and Mainline Tap facilities from State Highway 92 and will be utilized for staging and spoil storage during construction of the aboveground facilities as well as the lateral. The work area will utilize a large portion of Northwest's 26-inch mainline and 30-inch loop line permanent easement which is maintained; therefore, only a minor amount of clearing will be required within 50 feet of Wetland 1. TEWA 0.1 is only slightly larger than the tie-in assembly that was previously certificated. A travel lane will be required to access the meter station, which will parallel the eastern edge of Northwest's mainline and loop block valves, and Northwest will minimize the amount of clearing within 50 feet of Wetland 1 to that necessary to provide access to the meter station facilities.
TEWA 4.1 will be located less than 50 feet (21.2 feet) from Wetland 1.2	0.25	1	Wetland 1.2 was avoided by boring 127th Avenue NE, but to accomplish the bore TEWA 4.1 must be located within 50 feet of Wetland 1.2.
TEWA 6-R will be located less than 50 feet from Wetland 3a (16.6 feet), Wetland 3b (6.4 feet) and Wetland 4b (6.0 feet)	0.54	1	The construction right-of-way has been reduced to 40 feet in width adjacent to Wetland 3a to minimize impacts to this wetland. Because of the proximity of the surrounding wetlands (i.e., Wetlands 3b, 3c, 4b and 4.1), it is not feasible to locate TEWA 6-R more than 50 feet from Wetland 3a without directly impacting the other wetlands. The work area is necessary for spoil storage and for drag section lay out in this area.
TEWA 6.1 will be located less than 50 feet (8.5 feet) from Wetland 4.1 and less than 50 feet (44.5 feet) from Wetland 5.1	0.60	1	Because of the neckdown between Wetlands 5 and 5.1 which narrows the construction right-of-way width to 32 feet, TEWA 6.1 is necessary for spoil storage, drag section lay out and space to construct beneath the raised railroad grade within the Centennial Trail corridor. Locating TEWA 6.1 more than 50 feet from Wetlands 4.1 and 5.1 would eliminate its functionality and place it within 50 feet of other wetlands (i.e., Wetland 3a to the east).
TEWA 8.1 will be located less than 50 feet (22.3 feet) from Wetland 5.1	0.71	1	The construction right-of-way has been reduced in width to less than 35 feet between Wetlands 8 and 8.1. TEWA 8.1 is necessary for spoil storage because of the narrowed construction right-of-way as well as constraints involved with constructing beneath the raised railroad bed within the Centennial Trail corridor. TEWA 8.1 is setback 50 feet from Wetland 8.1, but because the outfall of Wetland 5.1 has been ditched and drains to the west it is not possible to locate TEWA 8.1 more than 50 feet from this wetland ditch.
TEWA 9.1 will be located less than 50 feet (47.5 feet) from Wetland 12.1	1.34	2	It is not possible to locate this work area 50 feet from Wetland 12.1 (Catherine Creek) because of the 90° degree PI at the intersection with Callow Road to the south. The work area is necessary for the crossing of Catherine Creek, replacement of the land culvert across the creek with a bridge and the tie-ins associated with the creek crossing and the 90° PI. In addition, the construction right-of-way has been narrowed to 40 feet in Callow Road which limits the work area.

Table 8 (Concluded)

Variance	Milepost	Site Plan	Reason for Variance
TEWA 13.1 will be located less than 50 feet (1.1 feet) from Wetland 14d and (31.8 feet) Wetland 14.2d	1.67	2	TEWA 13.1 has been located entirely within a mowed lawn to avoid tree clearing and wetland impacts. This work area is necessary because the construction right-of-way in Holly Lane has been reduced to 40 feet in width, which limits staging, storage and parking. Because the buffer of Wetland 14d is a mowed lawn, impacts to the wetland buffer and wetland are insignificant.
TEWA 14-R will be located less than 50 feet (31.1 feet) from Wetland 15	1.80	2	Because of the narrowed 40-foot wide construction right-of-way and the requirement to not remove trees, TEWA 14-R is required for spoil storage and staging during construction of the lateral along Holly Lane. To move TEWA 14-R more than 50 feet from Wetland 15 would severely constrain the work area required for construction in Holly Lane.
TEWA HDD 5-R will be located less than 50 feet from Wetland 27.1 (4.2 feet) and will intersect Wetland 27.2	4.45	4	Wetlands 27.1 and 27.2 were identified during reconnaissance surveys after the 24th Street HDD was incorporated into the project. Currently, the wetlands cannot be accurately delineated because access to the property has been denied. TEWA HDD 5-R is required to complete the 24th Street HDD and the Soper Hill Tap facilities.
Temporary access road TAR-7 will be located in Wetland 31a and refueling will be necessary in or within 100 feet of Wetland 31a	5.52	5	TAR-7 will utilize an existing private gravel road that has been constructed within Wetland 31a. Because of the extent of the wetland, it will be necessary to park and refuel equipment in Wetland 31a adjacent to TAR-7 to minimize equipment traffic in the wetland and to minimize the need for a refueling truck to travel through Wetland 31a to refuel equipment. Under no circumstances will the contractor allow material to spill on the ground surface, and all waste fluids will be removed from the site and disposed of properly.
TEWA 74-R will intersect Wetland 40	7.99	7	To accommodate the entire pullback string in one section for the HDD of the sloughs, TEWA 74-R was extended west across Wetland 40, which is a ditch. (The previous length of the work area did not take into account the pipe sag beneath the sloughs.) The pullback string will span the ditch on rollers to avoid wetland impacts. The extension of TEWA 74-R will also intersect a nursery road, and access from the nursery road across the ditch will be provided by a bridge using temporary equipment mats to avoid direct impacts to the ditch.